Comprehensive Traffic & Toll Revenue Study

North Texas Tollway Authority System

September 2017

CDM Smith®

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September 15, 2017

Mr. Gerry Carrigan
Executive Director
North Texas Tollway Authority
5900 West Plano Parkway, Suite 100
Plano, TX 75093

Re: North Texas Tollway Authority System Comprehensive Traffic and Toll Revenue Study

Dear Mr. Carrigan:

CDM Smith is pleased to submit this North Texas Tollway Authority System Comprehensive Traffic and Toll Revenue (T&R) Study draft report. The report summarizes the results of the study, which includes T&R estimates for a fifty-year period. The purpose of this study was to conduct a Comprehensive T&R evaluation for all of the current NTTA facilities. The NTTA facilities for which T&R estimates are included in this report are the Dallas North Tollway (DNT), President George Bush Turnpike (PGBT), President George Bush Turnpike Eastern Extension (PGBT EE), Sam Rayburn Tollway (SRT), President George Bush Turnpike Western Extension (PGBT WE), Chisholm Trail Parkway (CTP), Addison Airport Toll Tunnel (AATT), Mountain Creek Lake Bridge (MCLB) and Lewisville Lake Toll Bridge (LLTB).

Our project team, including Michael Copeland, Justin Winn, Yagnesh Jarmarwala, Naveen Mokkapati, Maneesh Mahlawat, Parth Patel, Gustavo Baez (Baez Consulting), Paul Winkelblech (Research and Demographic Solutions), and others, gratefully acknowledge the assistance and cooperation received from NTTA as well as others contacted during the course of the study. CDM Smith sincerely appreciates the opportunity to have participated in this important project.

Respectfully submitted,

Kamran A. Khan
Senior Vice President
CDM Smith Inc.

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Disclaimer

Current accepted professional practices and procedures were used in the development of these traffic and revenue estimates. However, as with any forecast of the future, it should be understood that there may be differences between forecasted and actual results caused by events and circumstances beyond the control of the forecasters. In formulating its estimates, CDM Smith has reasonably relied upon the accuracy and completeness of information provided (both written and oral) by North Texas Tollway Authority. CDM Smith also has relied upon the reasonable assurances of some independent parties and is not aware of any facts that would make such information misleading.

CDM Smith has made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue estimates that must be considered as a whole; therefore selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including North Texas Tollway Authority. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Future developments cannot be predicted with certainty, and may affect the estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections or other forward-looking statements contained within the report are based on reasonable assumptions as of the date of the report, such forward looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects and/or potential improvements to the regional transportation network.

CDM Smith is not a financial advisor to the North Texas Tollway Authority, and as such:

- CDM Smith is not recommending any action to the North Texas Tollway Authority (NTTA)
- CDM Smith is not acting as an advisor to NTTA and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to NTTA with respect to the information and material contained in this communication
- NTTA should discuss any information and material contained in this communication with any and all internal or external advisors and experts NTTA deems appropriate before acting on the information in the report

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Executive Summary

This report documents the methodology, process, and results of a comprehensive traffic and revenue (T&R) study as requested of CDM Smith by the North Texas Tollway Authority (NTTA). The study included a system-wide review, traffic and socioeconomic data collection and analysis, and development of an independent fifty-year T&R forecast for all of NTTA's toll facilities, which includes the following:

- **Dallas North Tollway (DNT)**
  - Limits: IH 35E in Dallas to US 380 in Frisco
  - Length: Approximately 31 miles
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- **Lewisville Lake Toll Bridge (LLTB)**
- **Mountain Creek Lake Bridge (MCLB)**

This study builds upon previous T&R studies, the most recent of which is the NTTA System Comprehensive Traffic and Toll Revenue Study, prepared by CDM Smith in December 2016 (the "December 2016 Study"). The North Central Texas Council of Governments (NCTCOG) adopted a new metropolitan transportation plan (MTP) in March 2016 called Mobility 2040. The updated travel demand model roadway networks from the new MTP were incorporated into the T&R estimates included in the December 2016 Study, which also included an independent economic review of the

Mobility 2040 demographics along the NTTA corridors as well as comprehensive traffic count and travel time data collection. In addition, observed transaction and revenue trends were incorporated into the analysis.

The December 2016 Study focused solely on the existing NTTA System, which is currently comprised of the DNT, PGBT, PGBT EE, SRT, AATT, MCLB and LLTB. NTTA's other two roadways, PGBT WE and CTP, are currently part of the Special Projects System. It is anticipated that the NTTA System will be expanded to include CTP and PGBT WE following the refunding of the Special Projects System bonds and other debt in the fall of 2017. Therefore, CTP and PGBT WE have been incorporated into this current study, and the T&R forecasts presented in this report will include these two facilities.

Based on traffic forecasts developed for each toll gantry location, annual forecasts for each facility of the NTTA System were prepared through 2066. The projections extend from 2017 through 2066 and include the revenue forecasts for DNT, PGBT, AATT, MCLB, LLTB, PGBT EE, SRT, PGBT WE and CTP. In each case, forecasts for each of the facilities are based on modeled traffic estimates at each toll collection location, through the year 2040. These modeled estimates were refined, using post-model adjustments, reflecting validation factors used to match observed 2017 traffic data at each toll gantry location.

The average toll at each location was based on the current mix of passenger car and commercial vehicle traffic and the current average tolls, modified in future years to reflect changing assumptions in the proportion of AVI and ZipCash transaction shares. Toll rates for ZipCash transactions are 50 percent higher than the rates for AVI transactions (with a minimum differential of $0.25 in 2017 dollars) in each case.

Estimates beyond year 2040 are based on nominal assumptions regarding future traffic growth as, with assumed toll rate increases as noted previously. As shown in Table ES-1, the estimated annual revenue on the DNT is expected to increase from $247.9 million in 2017 to $364.8 million by 2025 and $545.5 million by 2035. Revenue on the PGBT is expected to be $221.0 million in 2017, increasing to $320.6 million by 2025 and $481.7 million by 2035. Revenue on the SRT is expected to be $177.8 million in 2017, increasing to $268.0 million by 2025 and $424.4 million by 2035. As 2058 is the end of the fifty-year operational agreement of the SRT between NTTA and TxDOT, revenue from SRT is estimated through August 31, 2058, while the other facilities are assumed to generate revenue for NTTA in perpetuity. The PGBT EE toll revenue shown is the NTTA's share of the toll revenue. Under the PGBT EE project agreement with TxDOT, NTTA keeps 80 percent of the revenue generated by the PGBT EE, and the remaining 20 percent is paid to TxDOT. NTTA's share of the revenue on the PGBT EE is expected to be $36.9 million in 2017, increasing to $57.0 million by 2025 and $93.2 million by 2035. Together, the DNT, PGBT and SRT account for the majority of revenue generated by the NTTA System.

The estimated annual revenue on PGBT WE is expected to increase from $56.1 million in 2017 to $96.2 million by 2025 and $151.9 million by 2035. Revenue on the CTP is expected to be $44.9 million in 2017, increasing to $82.9 million by 2025 and $149.9 million by 2035. Revenue from the AATT, MCLB and LLTB are expected to be about $10.3 million, combined, in 2017. By 2025 this is estimated to reach a combined $15.5 million, still a very small share of total NTTA System revenue.

Total revenue on the existing NTTA System, is expected to increase from about $795.0 million in 2017 to $1.20 billion in 2025 and $1.87 billion in 2035. Driven by nominal traffic growth and continued assumed modest inflationary adjustments in toll rates, revenue on the NTTA System is expected to reach more than $3 billion per year by 2047.

Table ES-1. NTTA System Estimated Annual Toll Revenue (millions)

Year	DNT	PGBT	SRT	PGBT EE*	PGBT WE	CTP	AATT-MCLB-LLTB	NTTA System
2017	$247.89	$221.02	$177.85	$36.91	$56.12	$44.94	$10.31	$795.03
2018	$263.37	$230.88	$189.03	$38.75	$59.03	$50.99	$11.14	$843.19
2019	$276.56	$239.59	$198.05	$40.73	$62.95	$56.25	$11.76	$885.90
2020	$289.98	$251.12	$207.28	$43.05	$66.58	$60.17	$12.38	$930.56
2021	$303.71	$263.93	$217.19	$45.58	$73.36	$64.08	$12.95	$980.80
2022	$320.21	$277.63	$230.10	$48.27	$81.32	$68.34	$13.56	$1,039.44
2023	$334.83	$290.93	$242.15	$50.99	$86.61	$72.87	$14.19	$1,092.58
2024	$350.33	$305.21	$254.75	$53.88	$91.03	$77.76	$14.88	$1,147.84
2025	$364.82	$320.56	$268.00	$57.01	$96.22	$82.93	$15.55	$1,205.08
2026	$381.92	$337.24	$282.07	$60.33	$101.03	$88.48	$16.27	$1,267.35
2027	$397.50	$350.67	$294.97	$63.54	$102.63	$93.82	$16.95	$1,320.08
2028	$414.19	$364.80	$308.40	$66.65	$107.38	$99.48	$17.68	$1,378.58
2029	$430.41	$379.32	$322.45	$69.90	$113.37	$105.50	$18.49	$1,439.43
2030	$447.89	$395.00	$337.32	$73.33	$119.09	$111.95	$19.38	$1,503.97
2031	$465.83	$410.59	$353.04	$76.97	$126.84	$118.63	$20.18	$1,572.09
2032	$485.17	$427.28	$369.59	$80.80	$132.27	$125.75	$21.03	$1,641.91
2033	$504.17	$444.50	$386.94	$84.72	$138.90	$133.34	$21.94	$1,714.51
2034	$524.54	$462.84	$405.15	$88.79	$145.02	$141.43	$22.92	$1,790.69
2035	$545.50	$481.71	$424.38	$93.24	$151.95	$149.88	$23.94	$1,870.60
2036	$568.04	$501.96	$444.57	$97.92	$158.35	$158.91	$25.05	$1,954.80
2037	$590.90	$520.89	$463.94	$102.61	$165.72	$170.57	$26.12	$2,040.76
2038	$612.38	$540.73	$484.13	$106.92	$172.58	$180.37	$27.26	$2,124.38
2039	$634.22	$561.12	$504.99	$111.35	$180.65	$190.59	$28.46	$2,211.38
2040	$657.42	$582.71	$526.63	$115.91	$188.12	$201.38	$29.73	$2,301.90
2041	$679.99	$604.15	$549.63	$120.71	$196.82	$212.25	$31.07	$2,394.62
2042	$703.91	$626.92	$573.71	$125.69	$204.91	$223.72	$32.51	$2,491.36
2043	$728.43	$650.23	$599.67	$130.92	$214.81	$236.03	$33.91	$2,593.99
2044	$754.70	$675.16	$626.90	$136.34	$224.10	$249.10	$35.39	$2,701.69
2045	$781.03	$700.51	$653.75	$142.10	$234.51	$262.57	$36.93	$2,811.40
2046	$807.80	$727.49	$681.32	$147.64	$242.77	$274.01	$38.47	$2,919.50
2047	$834.49	$754.66	$710.79	$153.23	$252.80	$285.80	$40.05	$3,031.82
2048	$862.84	$783.47	$741.56	$158.97	$261.93	$298.12	$41.73	$3,148.62
2049	$891.12	$813.12	$773.38	$165.01	$272.04	$310.71	$43.37	$3,268.74
2050	$921.18	$844.78	$806.59	$171.24	$281.20	$323.97	$45.10	$3,394.06
2051	$950.63	$875.29	$839.15	$177.75	$292.52	$336.11	$46.79	$3,518.24
2052	$979.87	$907.38	$872.78	$184.42	$302.93	$348.75	$48.58	$3,644.72
2053	$1,009.50	$939.65	$909.16	$191.44	$315.26	$361.94	$50.30	$3,777.24
2054	$1,041.06	$973.95	$947.09	$198.68	$326.49	$375.75	$52.12	$3,915.14
2055	$1,071.99	$1,008.91	$984.95	$206.35	$339.69	$389.88	$54.07	$4,055.85
2056	$1,104.95	$1,046.17	$1,024.22	$214.24	$351.73	$404.68	$56.15	$4,202.14
2057	$1,137.77	$1,083.52	$1,065.72	$222.36	$365.76	$419.96	$58.14	$4,353.21
2058	$1,172.67	$1,123.44	$737.55	$230.78	$378.63	$436.07	$60.23	$4,139.37
2059	$1,207.91	$1,163.85	$0.00	$239.45	$394.15	$452.28	$62.47	$3,520.12
2060	$1,246.43	$1,207.79	$0.00	$248.61	$408.31	$469.23	$64.90	$3,645.27
2061	$1,284.54	$1,252.67	$0.00	$258.38	$424.44	$487.08	$67.27	$3,774.39
2062	$1,321.18	$1,296.42	$0.00	$267.55	$439.07	$505.76	$69.56	$3,899.54
2063	$1,360.48	$1,342.94	$0.00	$277.70	$456.59	$524.60	$72.10	$4,034.41
2064	$1,402.39	$1,392.25	$0.00	$288.16	$472.71	$544.38	$74.80	$4,174.69
2065	$1,443.84	$1,442.23	$0.00	$299.23	$491.95	$564.87	$77.51	$4,319.62
2066	$1,487.90	$1,495.29	$0.00	$310.61	$509.46	$586.30	$80.37	$4,469.93

* - PGBT EE toll revenue shown in the Table is the NTTA's share of the toll revenue

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Section 1
Introduction

This report documents the methodology, process, and results of a comprehensive traffic and revenue (T&R) study as requested of CDM Smith by the North Texas Tollway Authority (NTTA). The study included a system-wide review, traffic and socioeconomic data collection and analysis, and development of an independent fifty-year T&R forecast for the NTTA System.

Figure 1-1 illustrates the NTTA System, which currently includes the following:

- **Dallas North Tollway (DNT)**
  - Limits: IH 35E in Dallas to US 380 in Frisco
  - Length: Approximately 31 miles
- **President George Bush Turnpike (PGBT), Excluding Eastern Extension**
  - Limits: Belt Line Road in Irving to SH 78 in Garland
  - Length: Approximately 30 miles
- **President George Bush Turnpike Eastern Extension (PGBT EE)**
  - Limits: SH 78 in Garland to IH 30 in Garland
  - Length: Approximately 10 miles
- **Sam Rayburn Tollway (SRT)**
  - Limits: Business 121 in Coppell to US 75 in McKinney
  - Length: Approximately 26 miles
- **Addison Airport Toll Tunnel (AATT)**
- **Lewisville Lake Toll Bridge (LLTB)**
- **Mountain Creek Lake Bridge (MCLB)**

Also shown in Figure 1-1 is the Special Projects System, which is comprised of the following:

- **President George Bush Turnpike Western Extension (PGBT WE)**
  - Limits: IH 20 in Grand Prairie to SH 183 in Irving
  - Length: Approximately 10 miles
- **Chisholm Trail Parkway (CTP)**
  - Limits: US 67 in Cleburne to IH 30 in Fort Worth
  - Length: Approximately 28 miles

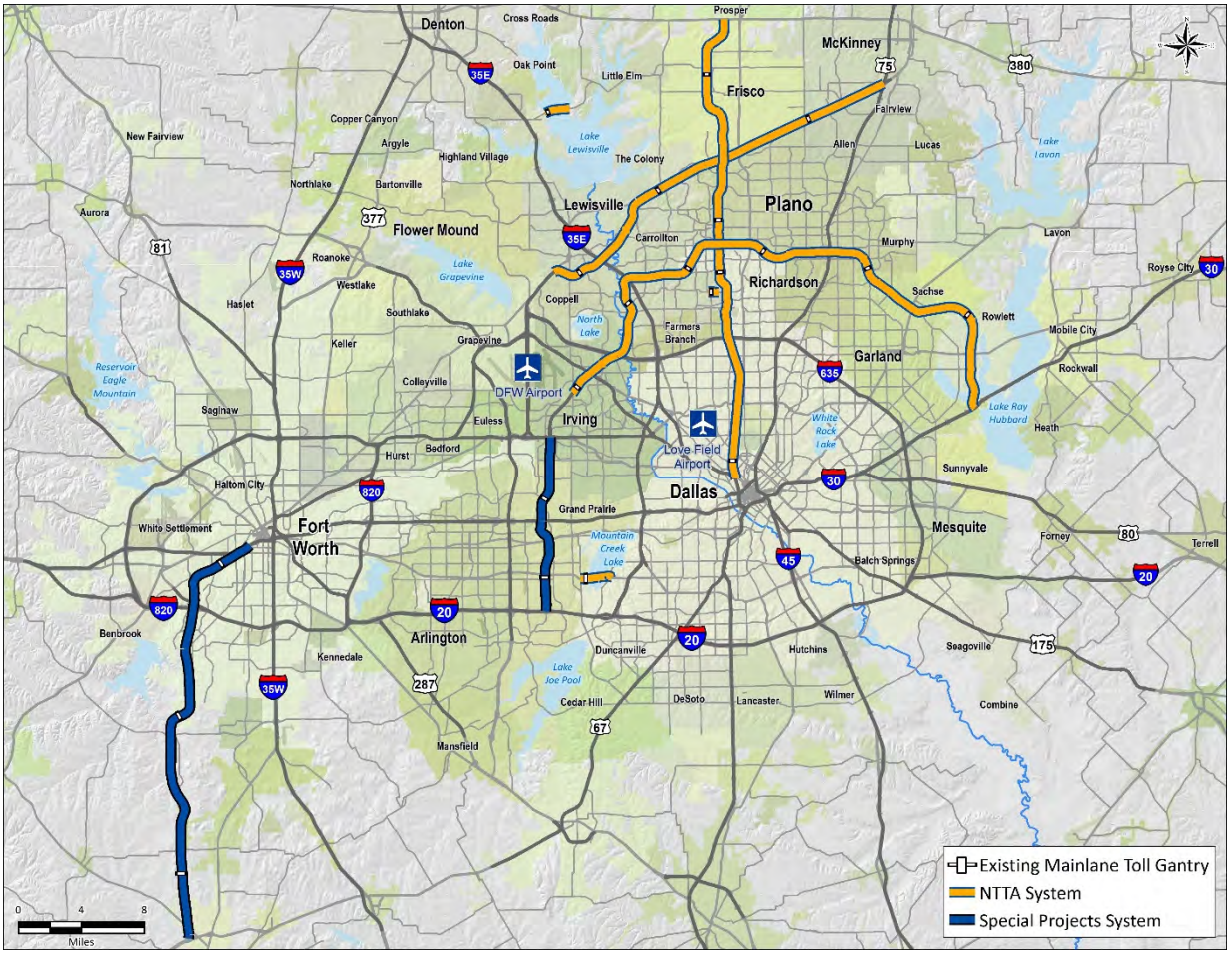


Figure 1-1.
Current NTTA System and Special Projects System

BACKGROUND AND AUTHORITY FOR STUDY

This study builds upon previous T&R studies, the most recent of which is the NTTA System Comprehensive Traffic and Toll Revenue Study, prepared by CDM Smith in December 2016 (the "December 2016 Study"). The North Central Texas Council of Governments (NCTCOG) adopted a new metropolitan transportation plan (MTP) in March 2016 called Mobility 2040. The updated travel demand model roadway networks from the new MTP were incorporated into the T&R estimates included in the December 2016 Study, which also included an independent economic review of the Mobility 2040 demographics along the NTTA corridors as well as comprehensive traffic count and travel time data collection. In addition, observed transaction and revenue trends were incorporated into the analysis.

The December 2016 Study focused solely on the existing NTTA System, which is currently comprised of the DNT, PGBT, PGBT EE, SRT, AATT, MCLB and LLTB. NTTA's other two roadways, PGBT WE and CTP, are currently part of the Special Projects System. It is anticipated that the NTTA System will be expanded to include CTP and PGBT WE following the refunding of the Special Projects System bonds and other debt in the fall of 2017. Therefore, CTP and PGBT WE have been incorporated into this current study, and the T&R forecasts presented in this report will include these two facilities. For the purposes of this

current study, the term "NTTA System" henceforth will be used to describe this future condition, inclusive of PGBT WE and CTP, as shown in Figure 1-2.

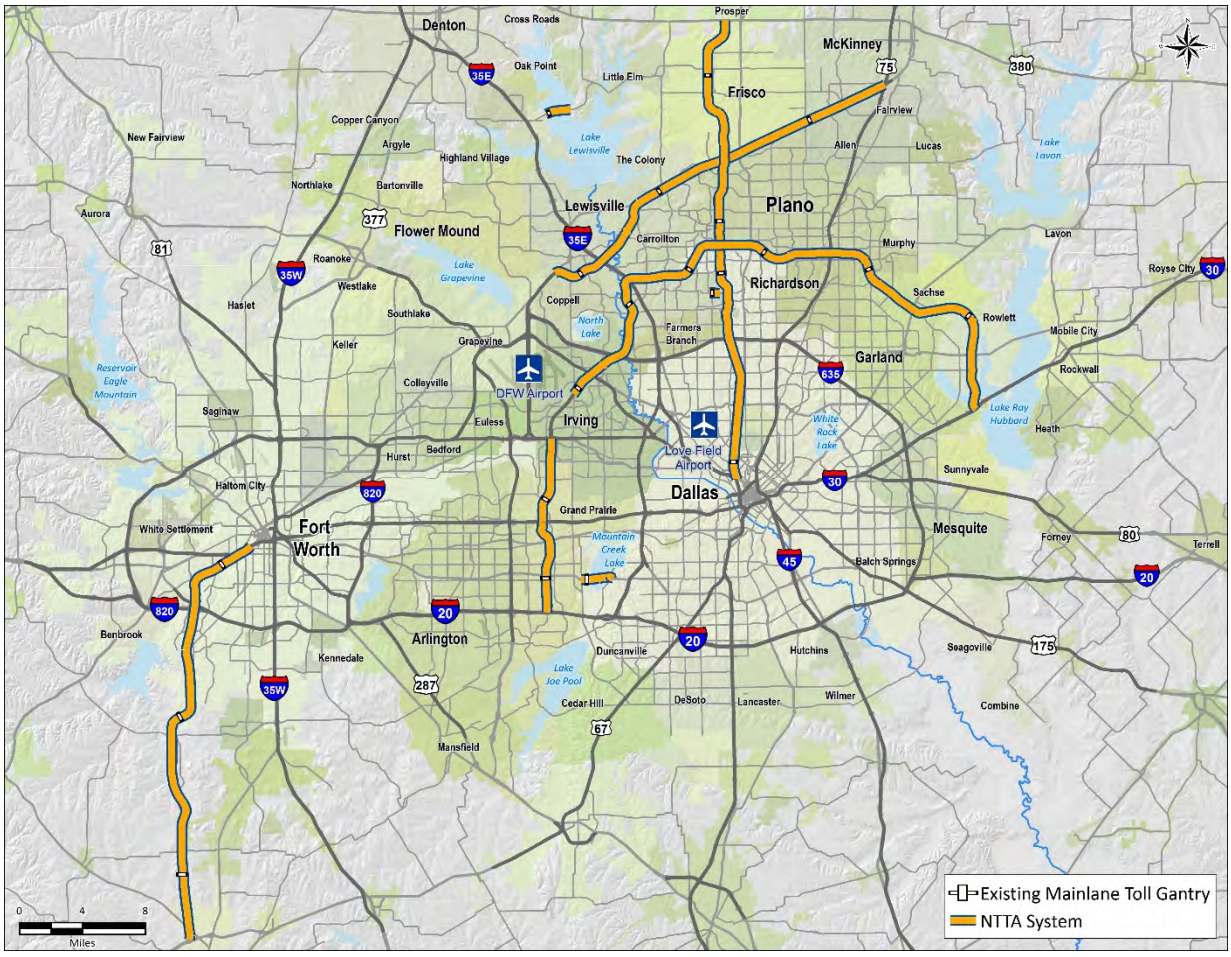


Figure 1-2.
Expanded NTTA System

OBJECTIVE AND SCOPE OF STUDY

The purpose of this study is to develop T&R forecasts for the NTTA System (see Figure 1-2). The following outlines the general structure of the report:

Section 2 – Current Traffic Trends and Characteristics

This section provides background information regarding the characteristics of NTTA's roadways and the highway infrastructure near NTTA System corridors. The information in this section provides a historical overview of traffic in the vicinity of the corridors, which was used as input when developing the T&R forecasts. This section also describes the additional data that was collected, which included traffic counts at specific locations around NTTA System corridors and travel time data on the NTTA System and other nearby roadways.

Section 3 – Dallas-Fort Worth Area Transportation Characteristics

This section contains a broad overview of the transportation system in the Dallas-Fort Worth (DFW) region and outlines the region-wide characteristics that may impact the NTTA System. The Mobility 2040 transportation commitments are described in this section.

Section 4 – Regional Demographic and Economic Trends

This section provides a description of the NCTCOG forecast process used to generate the base demographics and details the historical and expected future growth in the DFW region. The historical and expected future growth of the individual counties within the study area is also investigated followed by a description of the demographic characteristics along NTTA System corridors. Research and Demographic Solutions (RDS) performed an independent economic review of the official demographic datasets. RDS's socioeconomic review report is included as Appendix A at the end of this report. Their findings included the identification of necessary modifications to the regional growth projections within their study focus area. These modified growth projections were incorporated into the NCTCOG travel demand model resulting in an alternate set of trip tables. This alternate set of trip tables is referred to as the "revised" trip tables which were used for traffic forecasting and revenue estimation.

Section 5 – Travel Demand Model Development

This section describes the databases utilized as part of the analysis and highlights the methodologies implemented to calibrate and validate the travel demand model. The model is used to forecast future traffic on toll facilities, and is calibrated to ensure it is capable of replicating current traffic conditions along NTTA System corridors.

Section 6 – Estimated Traffic and Revenue

This section provides the updated traffic forecasts and revenue estimates for the NTTA System. The toll sensitivity analyses performed as part of the study are described in detail in this section, including several sensitivity tests to measure impacts of changes to key input variables to the base T&R forecasts. Also presented are the average weekday transactions and annual toll revenues anticipated on the NTTA System, as well as a description of the various assumptions used in the forecasting process.

Section 2

Current NTTA System Traffic Trends and Characteristics

This section provides background information regarding the characteristics of NTTA System facilities and the highway infrastructure near the NTTA System. The information in this section provides a historical overview of traffic in the vicinity of the NTTA System, which was used as input when developing the traffic and toll revenue forecasts. This section also describes the additional data that was collected, which includes traffic counts at specific locations around the NTTA System corridors and travel time analysis on the NTTA System facilities and other roadways along the NTTA System corridors.

NTTA SYSTEM FACILITIES IN OPERATION

The NTTA System facilities currently in operation are the Dallas North Tollway (DNT), President George Bush Turnpike (PGBT), President George Bush Turnpike Eastern Extension (PGBT EE), Sam Rayburn Tollway (SRT), Addison Airport Toll Tunnel (AATT), Mountain Creek Lake Bridge (MCLB), Lewisville Lake Toll Bridge (LLTB), President George Bush Turnpike Western Extension (PGBT WE) and Chisholm Trail Parkway (CTP).

Dallas North Tollway

The DNT, shown in Figure 2-1, is currently functioning as a limited-access, high-speed toll facility which extends northward from the junction with Stemmons Freeway (IH 35E) north of downtown Dallas through the Dallas suburbs to US 380 in Frisco. The existing DNT covers a distance of approximately 31 miles. The original DNT, which extended from its current southern terminus to IH 635, was constructed and opened to traffic in its entirety in June 1968. It was extended to Frankford Road in June 1987 and to Legacy Road in Plano in September 1994. In April 2004, with the completion of the grade-separated multi-level interchange with SRT, the DNT was extended north to just south of Gaylord Parkway in Frisco. The Extension Phase 3 extended the DNT from Gaylord Parkway to US 380 and opened to traffic on September 28, 2007. The opening sequence for the DNT is shown in Table 2-1. The existing DNT utilizes a "closed" toll collection system. Each of the four major sections of the facility have one mainlane toll gantry at which tolls are collected in both directions, with toll gantries positioned at selected ramps to prohibit toll-free movements on the facility. The sections of the DNT north of IH 635 are flanked by city- or county-maintained service roads.

Table 2-1. Opening Sequence of DNT

Project Phasing	Segment	Completion Date
Phase 1	IH 35E to IH 635	June 1968
Phase 1 Extension	IH 635 to Frankford Road	June 1987
Phase 2	Frankford Road to Legacy Road	September 1994
Phase 2 Extension	Legacy Road to Gaylord Parkway	April 2004
Phase 3 Extension	Gaylord Parkway to US 380	September 2007

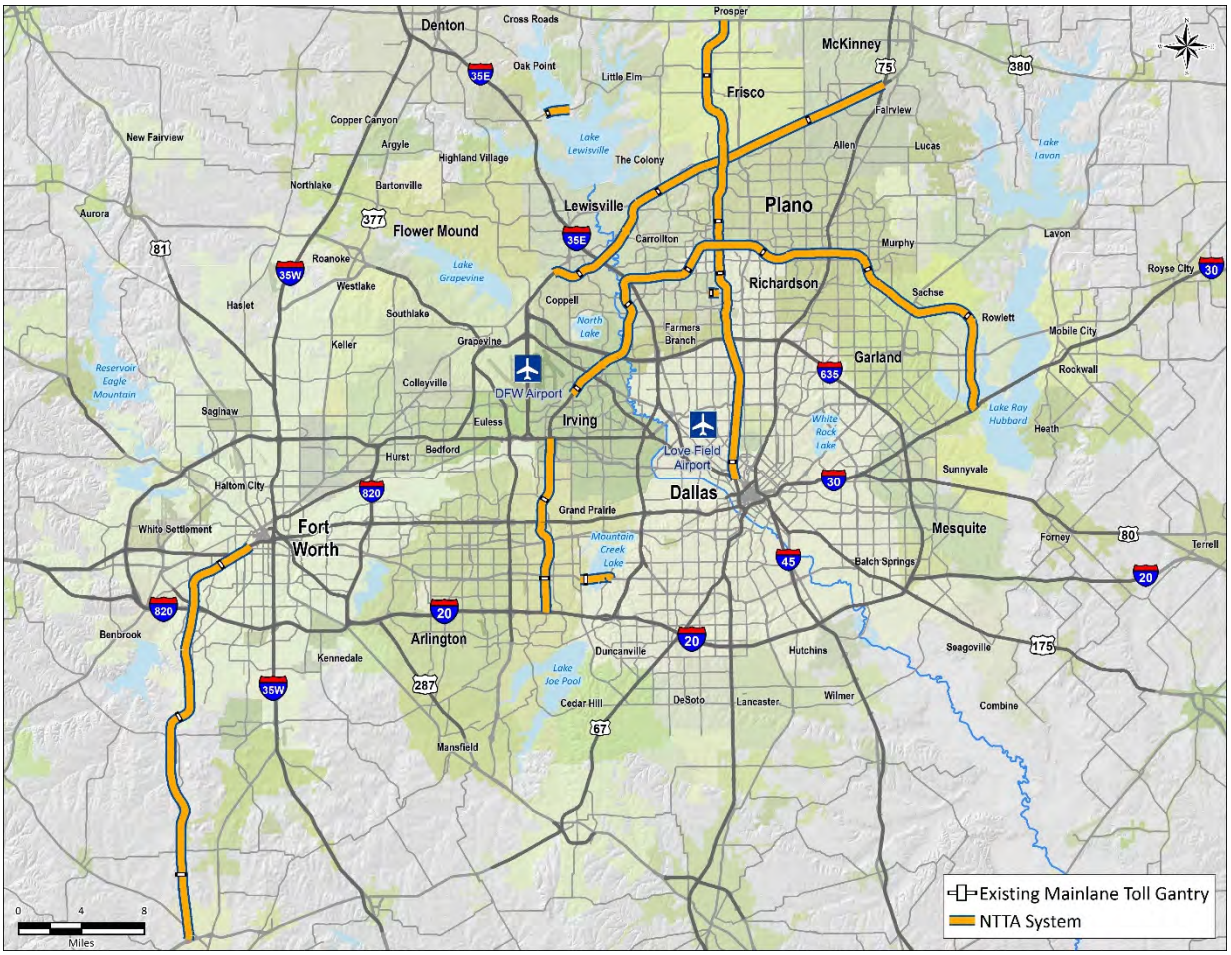


Figure 2-1.
The NTTA System

Access to the DNT is currently provided by a series of full interchanges located at Mockingbird Lane, Northwest Highway, Royal Lane, IH 635, Spring Valley Road, Belt Line Road, Keller Springs Road, Frankford Road, PGBT, West Park Boulevard, Parker Road, Spring Creek Parkway, SRT, John Hickman, Stonebrook Parkway, Cotton Gin Road, and Eldorado Parkway. Additional access is provided via partial interchanges located at Oaklawn Avenue, Wycliff Avenue, Cedar Springs Road, Lemmon Avenue, Lovers Lane, Walnut Hill Lane, Forest Lane, Harvest Hill Road, Alpha Road, Trinity Mills Road, Plano Parkway, Windhaven Parkway, Legacy Drive, Headquarters Drive, Gaylord Parkway, Panther Creek Parkway and CR 24.

President George Bush Turnpike (Including Eastern Extension)

As illustrated in Figure 2-1, the PGBT (including Eastern Extension) currently extends from the junction with IH 30 at its eastern end, traversing the communities of Rowlett, Garland and Richardson to a junction with US 75. The PGBT continues westward through the cities of Plano and Dallas to an interchange with the DNT. The facility then continues in a southwesterly direction through Carrollton to the interchange with IH 35E. At this point from IH 35E, the PGBT turns due south, along the section referred to as Segment IV, to the interchange with IH 635. From IH 635, the PGBT section referred to as Segment V continues southwesterly through the city of Irving to the northern terminus of the existing

SH 161 mainlanes in the vicinity of Belt Line Road just east of the DFW International Airport. The entire PGBT, from IH 30 to Belt Line Road covers a total distance of approximately 40 miles. The opening sequence of the PGBT facility is shown in Table 2-2.

Table 2-2. Opening Sequence of PGBT (Including Eastern Extension)

Project Phasing	Segment	Completion Date
Segment I A	Midway Road to Preston Road	November 1998
Segment I B	Preston Road to Coit Road	June 1999
Segment I C	Coit Road to US 75	December 1999
Segment II A	US 75 to Campbell Road	December 1999
Segment II B	Campbell Road to SH 78	April 2000
Segment III	Midway Road to IH 35E	July 2001
Segment IV	IH 35E to IH 635	September 2005
Segment V	IH 635 to Beltline Road	December 2001
Eastern Extension	SH 78 to IH 30	December 2011

The PGBT utilizes a "semi-closed" system of toll collection. The PGBT has six mainlane gantries positioned along the entire length of the facility with ramp gantries located on selected ramps along the project. Early in the PGBT planning process, it was decided that free access would be provided to the interchanges located at SH 78, US 75 and IH 35E, thus not meeting the requirements of a traditional "closed" toll collection system. Selected portions of the PGBT are flanked by city- or county-maintained frontage roads.

Access to the completed PGBT is provided by full interchanges located at IH 30, New Merritt Road, Firewheel Parkway, SH 78, North Garland Avenue, Campbell Road, Renner Road, Jupiter Road, US 75, Independence Parkway, Coit Road, Preston Road, DNT, Josey Lane, Old Denton Road, IH 35E, Sandy Lake Road, Belt Line Road, Valley View Lane and Royal Lane. Partial interchanges are located at Miller Road, Main Street, SH 66, Merritt Road, Miles Road, Shiloh Road, Plano Road, Alma Drive, Custer Drive, Midway Road, Rosemeade Parkway, Marsh Lane, Frankford Road, Kelly Boulevard, IH 635, Las Colinas Boulevard, SH 114, Gateway, and Belt Line Road. Additional intermediate access is allowed via a system of frontage roads and slip ramps.

Sam Rayburn Tollway

The SRT corridor is approximately 26 miles in length and runs in a northeast/southwest direction between the interchange of US 75 in McKinney and Denton Tap Road near the bridge over Denton Creek in Coppell. The corridor is crossed by several arterial streets as well as the DNT and IH 35E. The opening sequence for the SRT is shown in Table 2-3. The SRT currently utilizes a "semi-closed" system of toll collection. Toll-free sections are currently located near the interchanges with IH 35E and the DNT.

Table 2-3. Opening Sequence of SRT

Project Phasing	Segment	Completion Date
Phase 1	Denton Tap Road to Old Denton Road	July 2006
Phase 2	Old Denton Road to Coit Road	August 2008
Phase 3	Coit Road to Hardin Boulevard	September 2009
Phase 4A	Hardin Boulevard to US 75	December 2010
Phase 4B	Interchange at US 75	March 2011*
Phase 5	Interchange at DNT	December 2011

*Four major direct connectors at this interchange were opened in December 2010

Addison Airport Toll Tunnel

The AATT is located in the town of Addison to the west of the DNT between IH 635 and the PGBT as shown in Figure 2-1. The AATT is a connector for Keller Springs Road and covers a distance of approximately 3,700 feet from Midway Road to Addison Road with the actual tunnel length being 1,600 feet long traveling under the Addison Airport runway. The AATT is a two-lane facility and is served by a single two-way toll gantry located at the western terminus. The AATT opened to traffic in February 1999.

Mountain Creek Lake Bridge

The MCLB is located in southwest Dallas and crosses Mountain Creek Lake and connects to Spur 303 on either side. The total length of the MCLB including approach roads is approximately two miles. The MCLB is a two lane facility served by a single two-way toll gantry located at its western terminus. The MCLB was opened to traffic on April 30, 1979.

Lewisville Lake Toll Bridge

The LLTB is a 1.7-mile four-lane bridge in Denton County that is served by a single two-way toll gantry located at its western terminus. The western and eastern ends of the bridge lie in the cities of Lake Dallas and Little Elm, respectively. The LLTB is part of a corridor that runs from IH 35E in Lake Dallas to the Dallas North Tollway in Frisco and was opened to traffic on August 1, 2009.

President George Bush Turnpike Western Extension

The PGBT WE toll facility is approximately 11.5 miles long and runs from IH 20 in Grand Prairie to SH 183 in Irving. The corridor crosses several major east/west highways and arterials, including IH 20, SH 180 (Main Street), IH 30, and SH 183. Spur 303/Pioneer Parkway, which connects directly to the Mountain Creek Lake Toll Bridge, also crosses the PGBT WE corridor. Running parallel to PGBT WE are SH 360, FM 157/Collins Road in Arlington, Carrier Parkway and Belt Line Road in Grand Prairie and Irving, and Loop 12/Spur 408 in Dallas are potential north/south competing routes. PGBT WE was opened in phases, and the opening sequence of the facility is summarized in Table 2-4.

Table 2-4. Opening Sequence of PGBT WE

Project Phasing	Segment	Completion Date
Phase 1	SH 183 to Conflans Road	August 2009
Phase 2	Conflans Road to Egyptian Way	August 2009
Phase 3	Conflans Road to Egyptian Way (additional mainlanes)	April 2010
Phase 4	Egyptian Way to IH 20	October 2012

Chisholm Trail Parkway

The CTP is approximately 27.6 miles long and extends from US 67 in the City of Cleburne to IH 30 in the City of Fort Worth. The corridor crosses FM 1187, SH 183, and IH 20, as well as several east/west arterial routes including Vickery Boulevard, Berry Street, Seminary Drive, Altamesa Boulevard, and Sycamore School Road. Additionally, US 377, Vickery Boulevard, Bryant Irvin Road, Hulen Street, Granbury Road, SH 174 and IH 35W are potential north/south competing routes.

TOLL COLLECTION SYSTEM AND RATES

The following section provides a summary of the existing NTTA System toll collection configuration and toll rates. Also included is a comparison of DNT, PGBT, SRT, PGBT WE and CTP per mile toll rates with other similar toll facilities throughout the United States. A brief description of the NTTA TollTag and ZipCash systems is also provided.

TollTag Program

In July 1989, a voluntary subscription electronic toll collection (ETC) system based on automatic vehicle identification (AVI) was installed on DNT. Prior to August 1, 1999 the program, known as TollTag, charged patrons a slightly higher toll and a monthly service fee. Subsequent to August 1, 1999, TollTag and cash patrons were assessed tolls under the revised cash differential, $0.60/$0.75 toll rate scenario. On January 1, 2002, this same $0.60/$0.75 toll rate concept was implemented on the PGBT. Since its introduction, the TollTag program has gained substantial popularity by assisting in the reduction of patron delay at toll gantries. Approximately 15,000 TollTags were in circulation in 1989, which more than doubled to approximately 32,000 by the end of 1990 and reached the milestone of one million in November 2005. According to the NTTA website, there were more than 3.7 million TollTags in circulation in 2015.

ZipCash Program

Between 2007 and 2010, the NTTA replaced its cash toll collection system with an all-electronic toll collection (AET) system that includes the ZipCash program. The ZipCash system allows travelers to use NTTA facilities without a TollTag. When a motorist without a TollTag drives through tolling points, high-speed cameras take digital images of the license plate, and the tolls are billed to the registered owner of the vehicle. ZipCash toll rates are typically 50 percent higher than TollTag rates, reflecting the higher costs of collection. This surcharge is added to each toll to cover the costs of processing.

NTTA completed the conversion of all its existing toll roads, bridges and tunnels to AET in December 2010. The SRT and LLTB were opened to traffic in 2008 and 2009 with an AET system and never offered a cash option. DNT's mainlane gantry near Wycliff Avenue was the first toll collection location that was converted to ZipCash in early 2007, and the first NTTA full facility to be converted from cash to AET was the PGBT in July 2009. Conversions of the rest of the DNT, AATT and MCLB followed in December 2010.

NTTA System Toll Rates

On July 1, 2009, a new toll policy went into effect on the NTTA System. This toll policy was amended in late 2011, prior to the opening of the Eastern Extension of the PGBT, which includes changes to the toll escalation rate on the PGBT EE and toll revenue sharing terms with the TxDOT. Under the new toll rate policy, the base toll rate for AVI users on DNT, PGBT, SRT and PGBT WE was set at $0.145 per mile (in 2009 dollars). On CTP, the per mile rate (in 2009 dollars) has been set at $0.185 for the segment between IH 30 and Altamesa Boulevard and $0.145 per mile for the segment between Altamesa Boulevard and US 67. The per mile rates are to be adjusted every two years at an annual growth rate of 2.75 percent on all facilities. The most recent toll rate adjustment under this new policy took place on July 1, 2017, and the current per mile AVI rate on NTTA System facilities for two-axle vehicles is approximately $0.1801 per mile. This rate applies to users with TollTags as well as other tags supported by the NTTA's various interoperability agreements.

NTTA has adopted an axle-based vehicle classification system for determining the toll that each vehicle pays. For example, tolls charged to vehicles with five axles are four times the toll charged to vehicles

with two axles. Currently, all NTTA System facilities operate under cashless (ZipCash) toll collection system, where the license plates of vehicles without valid transponders using these facilities are photographed and are invoiced at a higher toll than the AVI toll.

Dallas North Tollway

As shown in Figure 2-2, the southernmost Mainlane Gantry 1 (MLP 1) is located between Wycliff Avenue and Cedar Springs Road. Ramp toll collection facilities within the original portion of the DNT are located at Mockingbird Lane, Northwest Highway and Royal Lane to and from the north only. On the Extension Phase 1, the MLP 2 is located between Keller Springs Road and Trinity Mills Road. Ramp toll collection facilities within the Extension Phase 1 are located at Spring Valley Road, Belt Line Road and Keller Springs Road to and from the south, and at Frankford Road to and from the north.

The MLP 3 on the Extension Phase 2 is located between Chapel Hill Boulevard and Parker Road. Ramp toll collection facilities within the Extension Phase 2 are located to and from the south at West Park Boulevard, and to and from the north at Parker Road and Spring Creek Parkway. In addition, with completion of the SRT/DNT interchange ramp toll collection facilities are located to and from the south on the ramps just north of SRT.

On the Extension Phase 3, the MLP 4 is located between Main Street and Eldorado Parkway. Ramp toll collection facilities within the Extension Phase 3 are located to and from the south of John Hickman, Stonebrook Parkway, and Cotton Gin Road. Additional ramp toll collection facilities are located to and from the north of Eldorado Parkway.

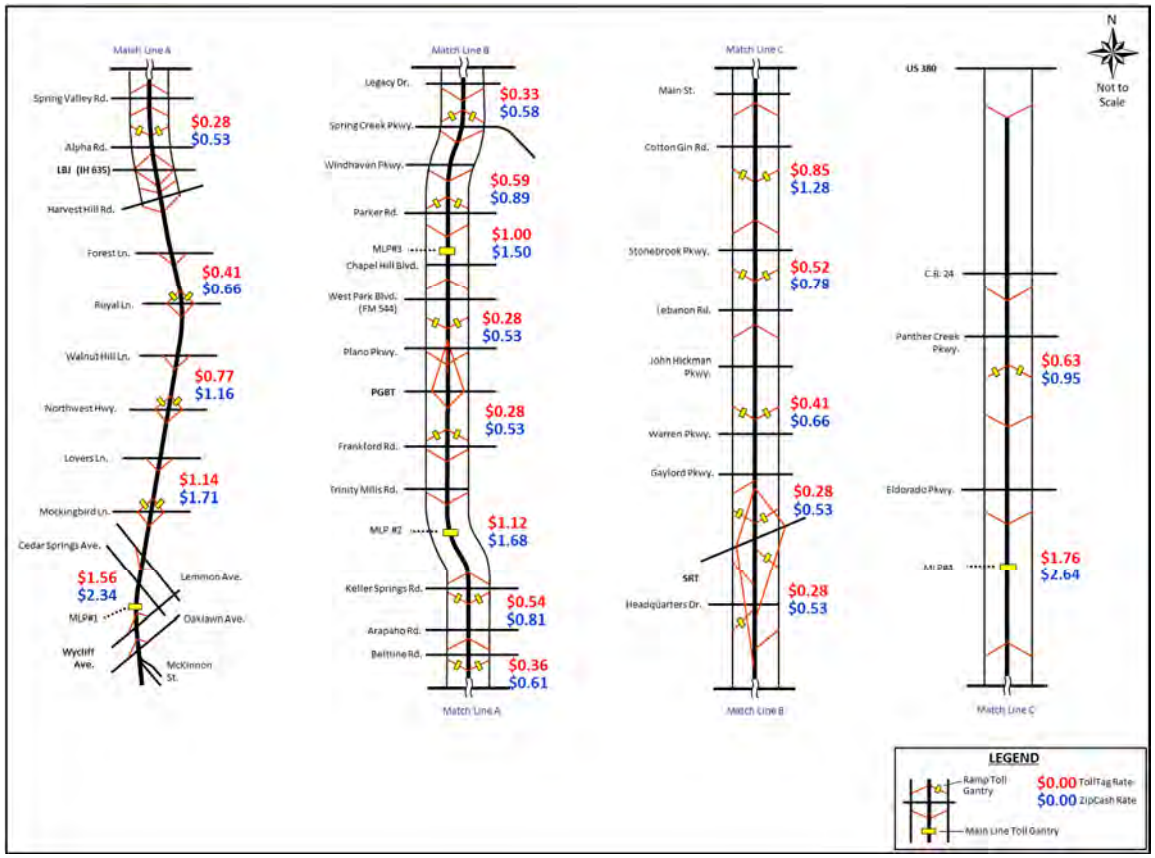


Figure 2-2.
Current (2017) DNT Toll Collection System and Passenger Car Toll Rates

President George Bush Turnpike (Including PGBT EE)

The collection system for the PGBT is presented in Figures 2-3 and 2-4. There are six mainlane gantries between IH 30 in the city of Garland and Belt Line Road in the city of Irving. MLP 5 is located near Merritt Road; MLP 6 is positioned between Shiloh Road and Renner Road; MLP 7 is located between Coit Road and Hillcrest Road; MLP 8 is placed between Frankford Road and Kelly Boulevard; MLP 9 is set between Sandy Lake Road and Belt Line Road in Carrollton/Farmers Branch; and MLP 10 is located between Gateway Road and Belt Line Road in Irving.

When traveling eastbound on the PGBT, the on-ramp toll gantries are located west of Gateway Road, east of Royal Lane, east of Marsh Lane, east of Midway Road, east of Coit Road, west of Custer Drive, east of Shiloh Road, east of Campbell Road, east of Garland Avenue, east of Merritt Road, east of Main Street and east of Miller Road. Off-ramp toll gantries are located west of Belt Line Road, west of Josey Lane, west of Kelly Boulevard, west of Preston Road, east of Jupiter Road, east of Renner Road, west of Crist Road, west of Firewheel Parkway and west of Miles Road.

When traveling westbound on the PGBT the on-ramp toll gantries are located west of Miles Road, west of Firewheel Parkway, west of Crist Road, east of Renner Road, east of Jupiter Road, west of Preston Road, west of Kelly Boulevard, west of Josey Lane and west of Belt Line Road, while the off-ramp toll gantries are located east of Miller Road, east of Main Street, east of Merritt Road, east of Garland Avenue, east of Campbell Road, east of Shiloh Road, west of Custer Drive, east of Coit Road, east of Midway Road, east of Marsh Lane, east of Royal Lane and west of Gateway Road.

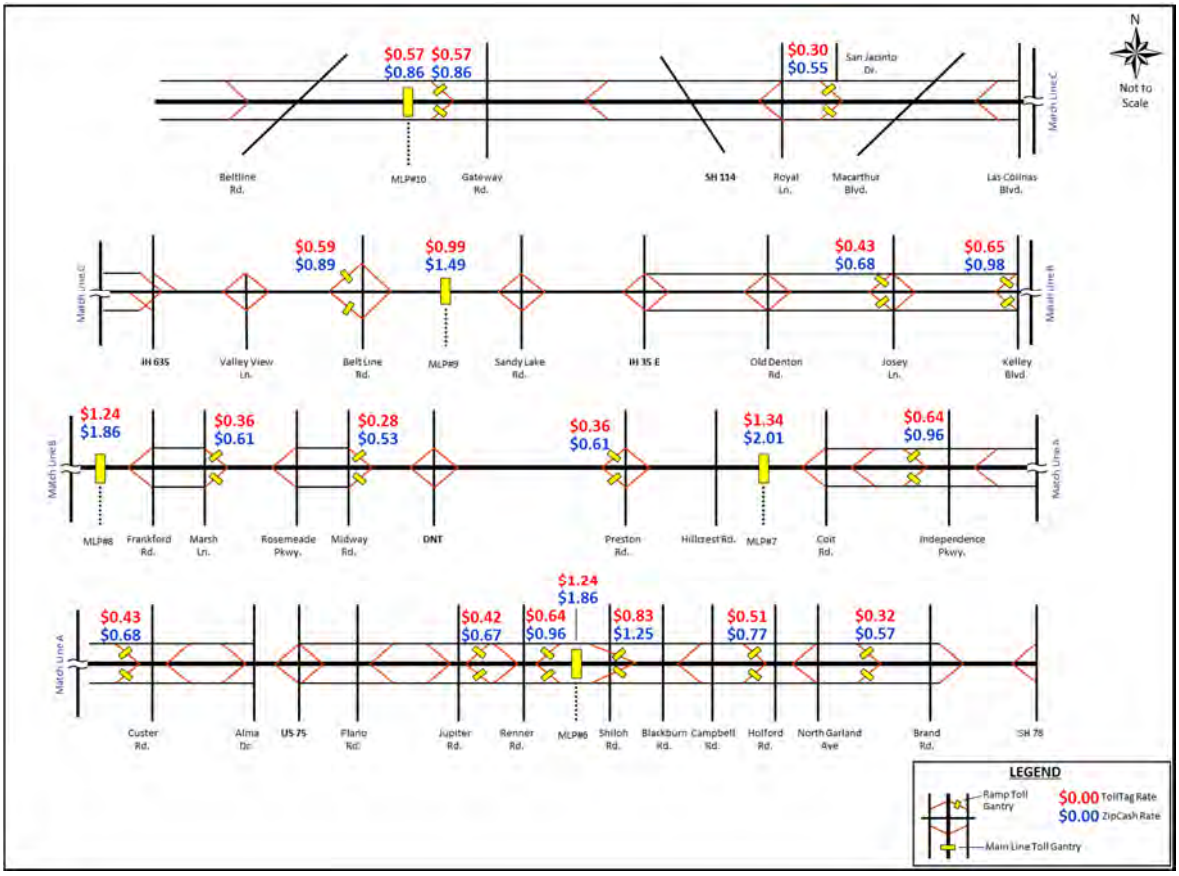


Figure 2-3.
Current (2017) PGBT (Excluding PGBT EE) Toll Collection System and Passenger Car Toll Rates

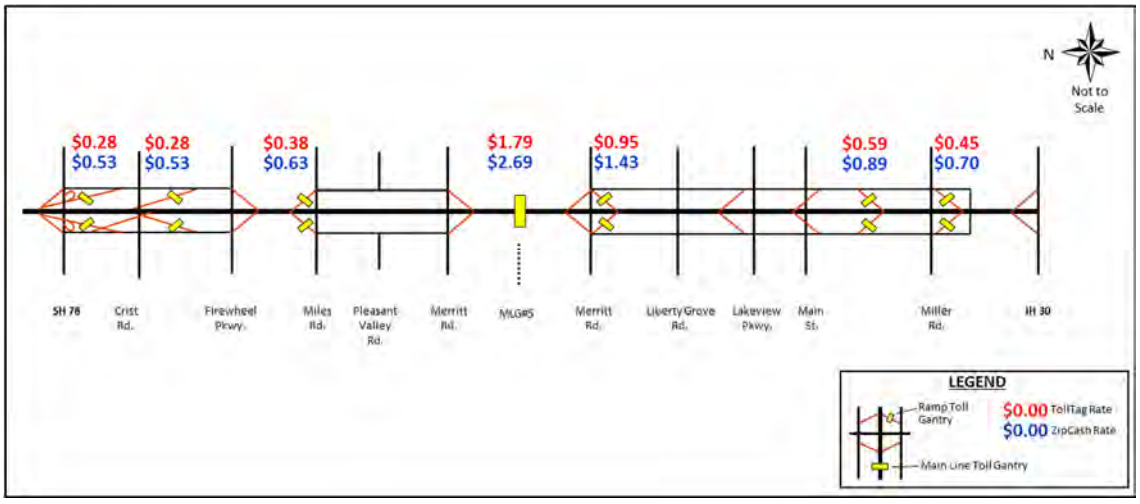


Figure 2-4.
Current (2017) PGBT EE Toll Collection System and Passenger Car Toll Rates

Sam Rayburn Tollway

Tolls are currently collected on the SRT at three mainlane gantries and forty ramp gantries as shown in Figure 2-5. The mainlane gantries are located near Denton Tap Road, Josey Lane and Custer Road. The ramp gantries are located at MacArthur Boulevard, Carrollton Parkway, Parker Road, FM 2281, Standridge Drive, Josey Lane, Plano Parkway, Spring Creek Parkway, Preston Road, Ohio Drive, Coit Road, Independence Parkway, Custer Road, Alma Drive, Stacy Road, Lake Forest Drive and Hardin Boulevard.

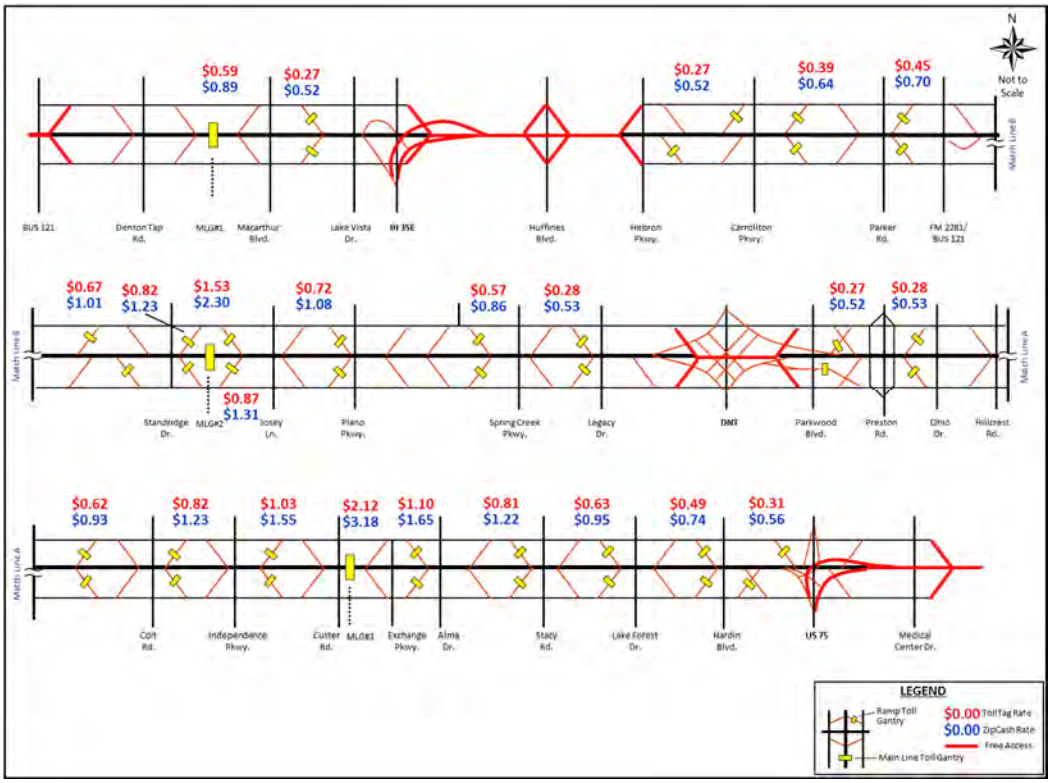


Figure 2-5.
Current (2017) SRT Toll Collection System and Passenger Car Toll Rates

President George Bush Turnpike Western Extension

Tolls are currently collected on the PGBT WE at two mainlane gantries and eighteen ramp gantries as shown in Figure 2-6. The mainlane gantries are located near Lower Tarrant Road and Arkansas Lane. The ramp gantries are located at Conflans Road, Shady Grove Road, Lower Tarrant Road, Dalworth Street, Marshall Drive, Pioneer Parkway, Arkansas Lane and Mayfield Road.

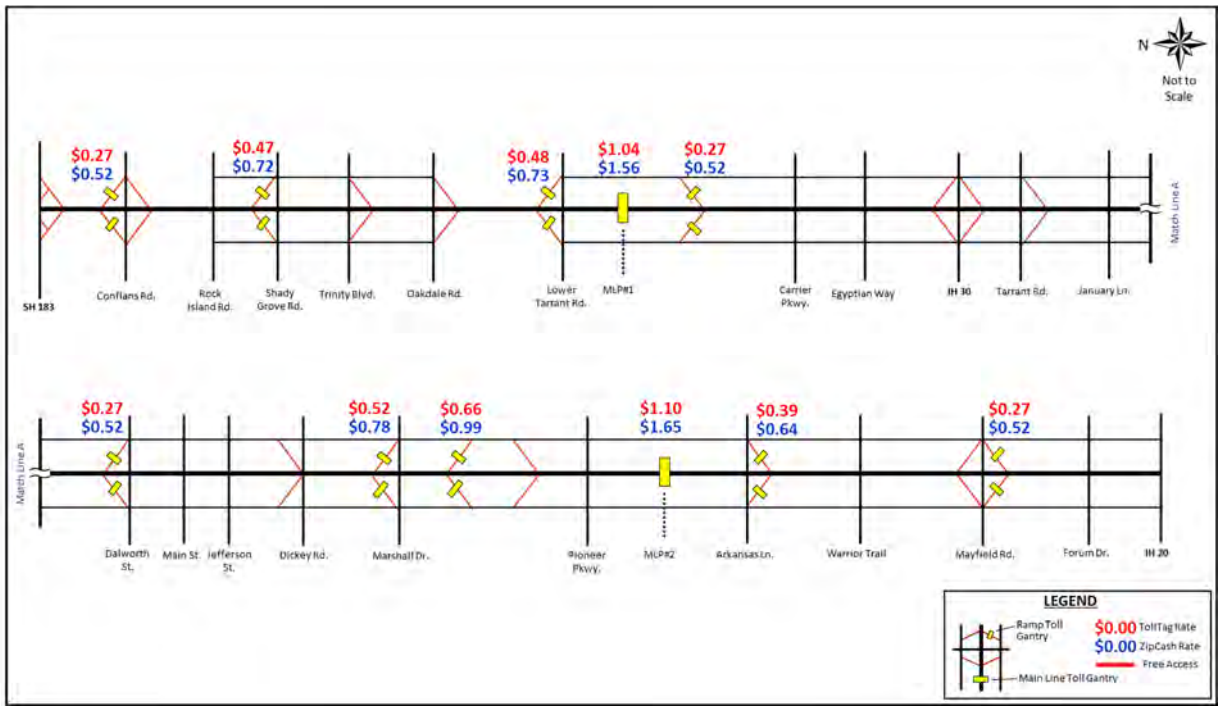


Figure 2-6.
Current (2017) PGBT WE Toll Collection System and Passenger Car Toll Rates

Chisholm Trail Parkway

Tolls are currently collected on the CTP at three mainlane gantries and twenty-four ramp gantries as shown in Figure 2-7. The mainlane gantries are located near Hulen Street, FM 1187 and CR 904. The ramp gantries are located at Edwards Ranch Road, Arborlawn Drive, Oakmont Boulevard, Altamesa Boulevard, Sycamore School Road, McPherson Boulevard, FM 1187, CR 920, CR 913, FM 917, CR 904 and Sparks Drive.

AATT, MCLB and LLTB

As stated previously, the AATT, MCLB and LLTB are each served by a single mainlane toll gantry. The mainlane gantry for the AATT is positioned at the western terminus of the tunnel. The mainlane gantry for the MCLB is located at the bridge's western terminus. The LLTB's mainlane gantry is located at the western end of the bridge in Lake Dallas.

The current toll rates (effective through June 30, 2019) on various NTTA gantries are shown in Table 2-5.

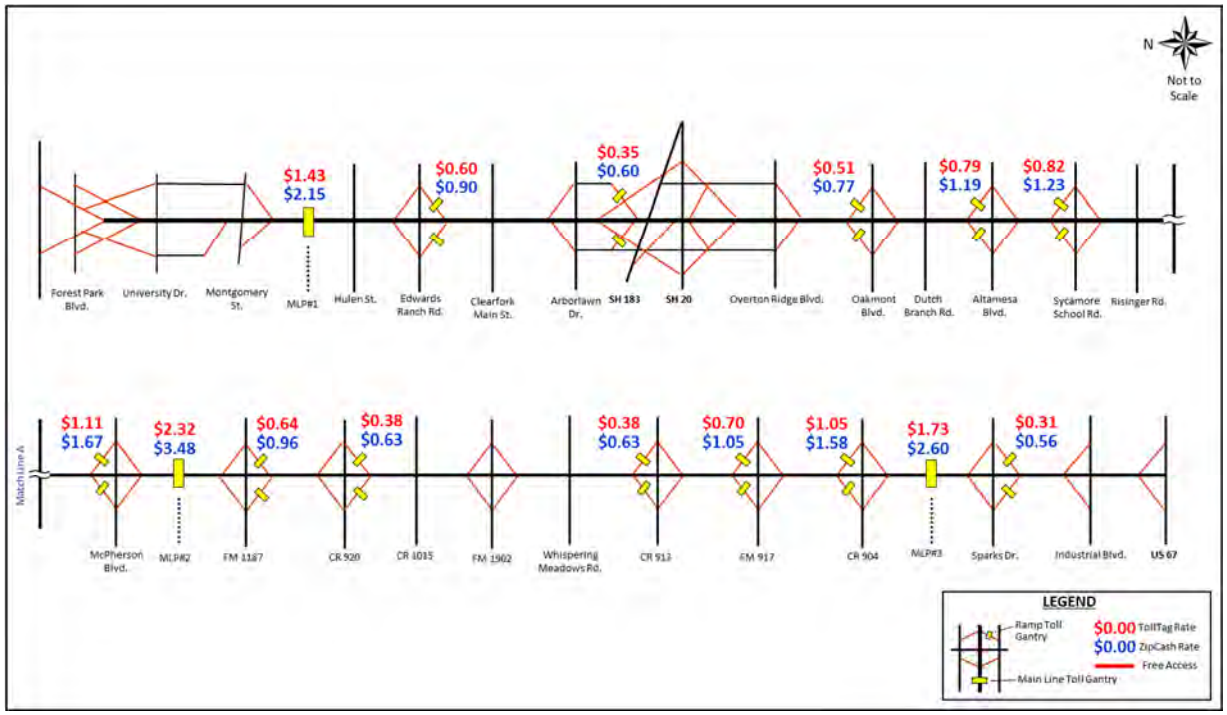


Figure 2-7.
Current (2017) CTP Toll Collection System and Passenger Car Toll Rates

Table 2-5.Existing NTTA System Toll Rates for Two-Axle Vehicles

DNT	TT	ZC
MLG 1 (Wycliff)	**$1.56**	**$2.34**
Mockingbird Lane	$1.14	$1.71
Northwest Highway	$0.77	$1.16
Royal Lane	$0.41	$0.66
Spring Valley Road	$0.28	$0.53
Belt Line Road	$0.36	$0.61
Keller Springs Road	$0.54	$0.81
MLG 2 (Trinity Mills)	**$1.12**	**$1.68**
Frankford Road	$0.28	$0.53
FM 544	$0.28	$0.53
MLG 3 (Parker)	**$1.00**	**$1.50**
Parker Road	$0.59	$0.89
Windhaven Parkway	$0.48	$0.73
Spring Creek Parkway	$0.33	$0.58
Gaylord Parkway	$0.28	$0.53
Legacy Drive	$0.28	$0.53
Headquarters Drive	$0.28	$0.53
Lebanon Road	$0.41	$0.66
Stone Brook Parkway	$0.52	$0.78
Cotton Gin Rd./Main St.	$0.85	$1.28
MLG 4 (Eldorado)	**$1.76**	**$2.64**
Eldorado Parkway	$0.63	$0.95

SRT	TT	ZC
MLG 1 (Denton Tap)	**$0.59**	**$0.89**
MacArthur Boulevard	$0.27	$0.52
Carrollton Parkway	$0.27	$0.52
Parker Road	$0.39	$0.64
Old Denton Road	$0.45	$0.70
Standridge Drive West	$0.67	$1.01
Josey Lane West	$0.82	$1.23
MLG 2 (Josey)	**$1.53**	**$2.30**
Standridge Drive East	$0.87	$1.31
Josey Lane East	$0.72	$1.08
Plano Parkway	$0.57	$0.86
Spring Creek Parkway	$0.28	$0.53
Preston Road	$0.27	$0.52
Hillcrest Road	$0.28	$0.53
Coit Road	$0.62	$0.93
Independence Parkway	$0.82	$1.23
Custer Road	$1.03	$1.55
MLG 3 (Custer)	**$2.12**	**$3.18**
Exchange Parkway	$1.10	$1.65
Alma Drive	$0.81	$1.22
Stacy Road	$0.63	$0.95
Lake Forest Drive	$0.49	$0.74
Hardin Boulevard	$0.31	$0.56

PGBT	TT	ZC
Miller Road	$0.45	$0.70
Main Street	$0.59	$0.89
Merritt Road	$0.95	$1.43
MLG 5 (Merritt)	**$1.79**	**$2.69**
Miles Road	$0.38	$0.63
Firewheel Parkway	$0.28	$0.53
Crist Road	$0.28	$0.53
North Garland Avenue	$0.32	$0.57
Campbell Road	$0.51	$0.77
East Renner Road	$0.83	$1.25
MLG 6 (Shiloh)	**$1.24**	**$1.86**
Shiloh Road	$0.64	$0.96
West Renner Road	$0.42	$0.67
Independence Parkway	$0.43	$0.68
Coit Road	$0.64	$0.96
MLG 7 (Coit)	**$1.34**	**$2.01**
Preston Road	$0.36	$0.61
Midway Road	$0.28	$0.53
Marsh Lane	$0.36	$0.61
MLG 8 (Frankford)	**$1.24**	**$1.86**
Kelly Boulevard	$0.65	$0.98
Josey Lane	$0.43	$0.68
MLG 9 (Sandy Lake)	**$0.99**	**$1.49**
Belt Line Road North	$0.59	$0.89
Royal Lane	$0.30	$0.55
Belt Line Road South	$0.57	$0.86
MLG 10 (Belt Line)	**$0.57**	**$0.86**
Conflans Road	$0.27	$0.52
Shady Grove Road	$0.47	$0.72
Lower Tarrant North	$0.48	$0.73
MLG 11 (Lower Tarrant)	**$1.04**	**$1.56**
Lower Tarrant South	$0.27	$0.52
Dalworth Street	$0.27	$0.52
Marshall Drive	$0.52	$0.78
Pioneer Parkway	$0.66	$0.99
MLG 12 (Arkansas)	**$1.10**	**$1.65**
Arkansas Lane	$0.39	$0.64
Mayfield Road	$0.27	$0.52

Addison Airport Toll Tunnel	TT	ZC
Mainlane Gantry	$0.63	$0.95

Mountain Creek Lake Bridge	TT	ZC
Mainlane Gantry	$0.63	$0.95

Lewisville Lake Toll Bridge	TT	ZC
Mainlane Gantry	$1.25	$1.88

CTP	TT	ZC
MLG 1 (Montgomery)	**$1.43**	**$2.15**
Edwards Ranch Road	$0.60	$0.90
Arborlawn Drive	$0.35	$0.60
Oakmont Boulevard	$0.51	$0.77
Altamesa Boulevard	$0.79	$1.19
Sycamore School Road	$0.82	$1.23
McPherson Boulevard	$1.11	$1.67
MLG 2 (Stewart Feltz)	**$2.32**	**$3.48**
FM 1187	$0.64	$0.96
CR 920	$0.38	$0.63
CR 913	$0.38	$0.63
FM 917	$0.70	$1.05
FM 904	$1.05	$1.58
MLG 3 (Sparks)	**$1.73**	**$2.60**
Sparks Road	$0.31	$0.56

TollTag Rate
$0.180 per mile

ZipCash Rate
TollTag rate + 50% surcharge ($0.25 minimum)

Minimum Toll:
$0.27 (TollTag) / $0.52 (ZipCash)

Note: Tolls for vehicles with more than two axles are calculated using the (N-1) multiplier.

Comparison of Per-Mile Toll Rates

The average per-mile toll rates for passenger cars on the NTTA System are compared with other representative urban toll facilities throughout the United States in Figure 2-8. NTTA facilities are shown in red. In general, toll rates on the NTTA System fall within the range of rates on other urban toll facilities. Currently, the average per-mile toll rate for two-axle vehicles is approximately $0.1801 per mile on all NTTA facilities for TollTag/AVI users, while ZipCash users are charged $0.1801 per mile plus a 50 percent surcharge with a minimum surcharge of $0.248 per transaction.

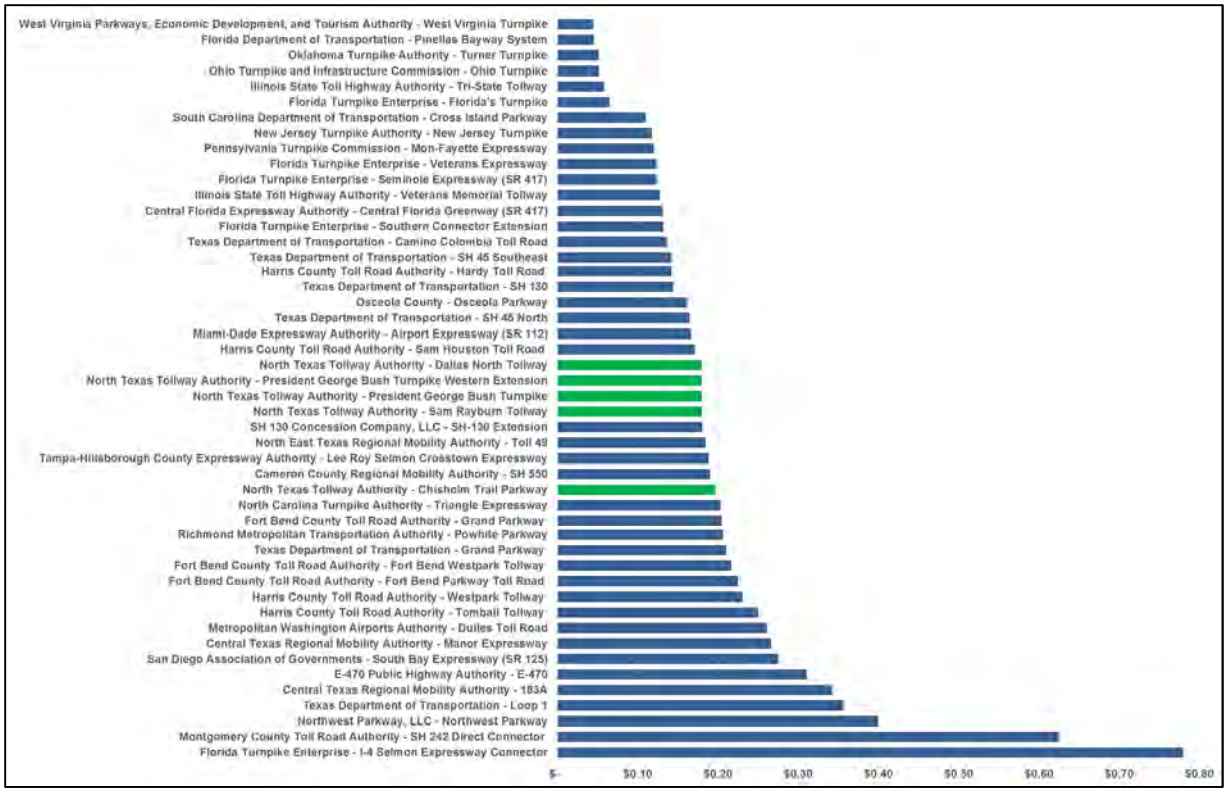


Figure 2-8.
Per Mile AVI Toll Rate Comparison to Other Toll Facilities

ANNUAL TRANSACTION TRENDS

CDM Smith evaluated transaction trends on the NTTA System from 2007 through 2017. This evaluation was used to provide a general understanding of the current, as well as historical, performance of the NTTA System facilities. The analysis provided useful insight into the effect that major toll configuration changes, such as the addition of extension projects, toll increases, the economic downturn between 2007 and 2010 have had on NTTA System growth trends.

Trends in Average Daily Transactions

Trends in annual average daily transactions from 2007 to 2016 for the NTTA System facilities are presented in Table 2-6 and are based on unaudited transaction data from NTTA. In 2016, daily transactions averaged approximately 714,500 on the DNT. Annual average daily transactions have grown by 1.8 percent since 2015, despite construction along the corridor. With the exception of 2009, transactions on DNT have experienced consistent positive growth over the last eight years, with the past five years showing strong growth. As the facility grows, expansions of the roadway are completed and economic development expands northward, transactions and revenues will likely remain robust.

As shown in Table 2-5, the opening of segments of the SRT in 2008 and 2009, as well as the economic downturn, had a negative impact on the PGBT's annual growth. Transactions on the PGBT declined by 1.5 percent between 2007 and 2008 and decreased by an additional 2.7 percent between 2008 and 2009. Transactions on the PGBT have seen consistent positive growth since that time, growing by 2.5 percent and 2.7 percent in 2015 and 2016, respectively. Since 2013, the transactions increased from 611,100 daily transactions to 669,500 transactions in 2016.

Transactions on the SRT increased in 2009 and 2010 by 21.0 and 28.5 percent, respectively, due to ramp up and the opening of new segments of the facility. The transaction growth has continued to be strong on the SRT as the facility has matured. SRT transactions grew by 7.7 percent in 2015 and by 7.3 percent in 2016. The PGBT EE, which opened in late December 2011, saw average daily transaction growth of 9.3 percent in 2016.

As indicated in Table 2-6, there was a consistent decrease in transactions on the AATT between 2007 and 2010 which could be partially attributed to the opening of the Arapaho Road Bridge in January 2006, which created a toll-free competing alternative parallel route for east-west traffic along the AATT corridor. AATT saw consistent positive transaction growth between 2011 and 2015 but declined by 5.6 percent in 2016.

Since its opening in November 1979, the MCLB has been subject to alternative periods of both positive and negative transactions and toll revenue growth, as is evident in Table 2-6. In recent years, however, transactions on the MCLB have typically seen positive growth.

Transactions on the LLTB has seen consistent positive transaction growth since its opening in 2009, and growth in transactions jumped noticeably in 2016 following the completion of the Eldorado Parkway corridor through Little Elm and Frisco.

Table 2-6. NTTA System Annual Average Daily Transactions (thousands)

Year	DNT	PGBT	SRT	PGBTEE	PGBTWE	CTP	AATT	MCLB	LLTB	Total
2007	535.3	501.6	--	--	--	--	5.8	8.4	--	**1,051.1**
2008	566.4	493.9	157.3	--	--	--	5.6	8.3	--	**1,231.5**
Change	5.8%	-1.5%	--	--	--	--	-3.8%	-1.2%	--	**17.2%**
2009	562.1	480.5	190.2	--	16.9	--	5.0	8.2	6.9	**1,270.0**
Change	-0.8%	-2.7%	21.0%	--	--	--	-10.5%	-0.5%	--	**3.1%**
2010	563.8	497.4	244.4	--	26.4	--	4.8	7.3	8.2	**1,352.3**
Change	0.3%	3.5%	28.5%	--	55.6%	--	-4.8%	-11.7%	19.3%	**6.5%**
2011	590.5	524.8	272.0	21.0	32.1	--	5.3	6.7	9.7	**1,462.3**
Change	4.7%	5.5%	11.3%	--	21.8%	--	11.1%	-7.6%	18.7%	**8.1%**
2012	629.3	581.3	304.9	67.4	46.5	--	5.5	6.9	10.7	**1,652.4**
Change	6.6%	10.7%	12.1%	220.7%	44.9%	--	3.4%	2.3%	10.0%	**13.0%**
2013	638.9	611.1	328.6	76.3	109.8	--	5.8	6.5	11.1	**1,788.0**
Change	1.5%	5.1%	7.8%	13.2%	135.9%	--	4.7%	-6.1%	3.7%	**8.2%**
2014	668.3	636.5	360.5	82.7	131.4	40.1	6.3	6.6	12.0	**1,944.2**
Change	4.6%	4.2%	9.7%	8.4%	19.7%	--	9.0%	1.6%	8.0%	**8.7%**
2015	702.2	652.2	388.2	90.7	149.4	66.5	6.7	7.0	12.7	**2,075.6**
Change	5.1%	2.5%	7.7%	9.7%	13.8%	66.1%	6.4%	5.8%	6.0%	**6.8%**
2016	714.5	669.5	416.4	99.1	167.1	81.5	6.3	7.4	15.1	**2,176.9**
Change	1.8%	2.7%	7.3%	9.3%	11.8%	22.5%	-5.6%	5.8%	18.4%	**4.9%**

Source: Unaudited NTTA Transaction Data

Trends in Monthly Transactions

Tables 2-7 through 2-13 show the monthly transactions for each facility from January 2007 through August 2017. As can be seen, there was a considerable drop in transactions on some facilities in the latter half of 2008 and early 2009 due to the economic downturn. However, the NTTA System has seen overall positive growth since 2007.

Table 2-7. Monthly Transaction Trends – Dallas North Tollway (millions)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007	14.7	14.7	16.7	16.0	16.8	16.1	16.1	16.9	15.7	17.9	16.8	17.0	**195.4**
2008	17.1	16.8	17.3	17.8	17.9	17.2	17.4	17.4	16.8	18.1	16.2	17.3	**207.3**
Change	16.3%	14.0%	3.9%	10.7%	6.7%	6.9%	8.4%	2.8%	7.2%	1.2%	-3.4%	1.4%	**6.1%**
2009	16.5	16.2	17.5	17.6	17.7	17.6	17.5	17.5	16.5	17.5	16.2	17.0	**205.1**
Change	-3.9%	-3.7%	1.0%	-1.0%	-1.1%	2.6%	0.2%	0.6%	-1.8%	-3.7%	-0.3%	-1.4%	**-1.0%**
2010	16.2	15.4	17.8	17.6	17.5	17.4	17.2	17.5	16.8	17.8	16.6	17.9	**205.8**
Change	-1.5%	-5.0%	1.6%	0.2%	-1.0%	-1.0%	-1.5%	0.2%	2.1%	2.0%	2.9%	5.0%	**0.3%**
2011	16.8	14.6	18.8	18.4	18.5	18.3	17.6	18.6	18.1	18.8	18.2	19.0	**215.6**
Change	3.2%	-4.8%	6.0%	4.7%	5.5%	4.9%	2.3%	6.0%	7.4%	5.6%	9.3%	6.2%	**4.8%**
2012	18.9	18.4	19.7	19.2	20.0	19.4	19.1	19.8	18.3	20.0	18.6	18.8	**230.3**
Change	13.0%	26.2%	4.8%	3.9%	8.3%	6.0%	8.4%	6.6%	1.5%	6.2%	2.5%	-1.1%	**6.8%**
2013	18.9	18.1	20.0	19.8	20.4	19.6	19.6	20.5	19.2	20.6	18.7	17.8	**233.2**
Change	-0.3%	-2.0%	1.1%	3.1%	2.0%	0.9%	2.5%	3.5%	4.7%	3.3%	0.6%	-5.0%	**1.2%**
2014	19.7	18.1	20.2	20.6	21.1	20.4	20.6	20.9	20.3	21.7	19.4	21.0	**244.0**
Change	4.1%	-0.2%	1.1%	4.3%	3.5%	4.3%	5.5%	1.9%	5.7%	5.0%	3.7%	17.7%	**4.6%**
2015	20.5	18.0	21.6	21.8	22.0	22.1	22.1	22.1	21.4	22.3	20.4	22.0	**256.4**
Change	4.2%	-0.1%	6.8%	5.8%	4.3%	8.6%	7.1%	5.9%	5.7%	2.9%	5.0%	4.8%	**5.1%**
2016	21.4	21.0	22.5	22.1	22.4	21.6	21.6	22.3	21.5	22.2	20.9	21.8	**261.5**
Change	4.4%	16.7%	4.6%	1.5%	1.5%	-2.4%	-2.4%	1.0%	0.5%	-0.3%	2.4%	-0.8%	**2.0%**
2017	21.2	20.2	22.8	21.5	22.8	21.7	21.5	21.7					**173.4**
Change	-1.0%	-4.0%	1.3%	-3.0%	1.9%	0.5%	-0.3%	-2.8%					

Table 2-8. Monthly Transaction Trends – President George Bush Turnpike (millions)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007	13.9	13.8	15.7	15.3	16.1	15.6	15.5	16.5	15.1	16.0	14.9	14.7	**183.1**
2008	15.1	14.8	15.2	15.8	15.8	15.2	15.4	15.3	14.6	15.4	13.7	14.4	**180.7**
Change	8.2%	7.4%	-3.0%	3.3%	-1.4%	-2.3%	-0.9%	-7.8%	-3.1%	-3.8%	-8.0%	-1.9%	**-1.3%**
2009	13.8	13.5	14.8	14.8	14.9	15.1	15.0	15.1	14.5	15.2	14.2	14.5	**175.4**
Change	-8.4%	-8.8%	-2.9%	-5.9%	-5.8%	-0.9%	-3.0%	-0.8%	-0.8%	-1.3%	3.2%	0.3%	**-3.0%**
2010	13.9	13.2	15.5	15.5	15.6	15.5	15.4	15.8	15.2	15.9	14.9	15.3	**181.6**
Change	0.7%	-2.2%	4.8%	4.4%	4.4%	2.6%	2.7%	4.3%	4.8%	4.6%	5.1%	5.6%	**3.6%**
2011	14.7	12.5	16.4	16.1	16.4	16.7	16.1	17.0	16.4	17.0	16.0	16.3	**191.7**
Change	6.1%	-5.4%	5.8%	3.9%	5.3%	8.0%	4.9%	7.9%	8.3%	6.9%	7.4%	6.6%	**5.6%**
2012	16.6	16.5	17.9	17.5	18.7	18.2	17.9	18.6	17.2	18.7	17.6	17.3	**212.7**
Change	12.8%	32.0%	9.0%	8.9%	13.8%	9.0%	11.1%	9.3%	4.4%	10.1%	10.0%	6.4%	**11.0%**
2013	17.5	16.8	18.7	18.8	19.7	18.9	19.0	19.9	18.6	20.0	18.4	16.6	**223.0**
Change	5.2%	2.1%	4.7%	7.3%	5.8%	3.8%	6.4%	6.7%	8.3%	6.8%	4.4%	-4.4%	**4.8%**
2014	18.5	17.2	19.3	19.8	20.4	19.7	19.9	19.9	19.3	20.5	18.4	19.4	**232.4**
Change	5.8%	1.9%	3.1%	5.5%	3.3%	4.1%	4.6%	0.4%	4.0%	2.5%	0.1%	17.0%	**4.2%**
2015	19.0	16.7	20.0	20.5	20.5	20.9	20.9	20.5	20.0	20.6	18.8	19.9	**238.2**
Change	2.5%	-2.9%	3.6%	3.3%	0.5%	6.1%	4.8%	2.8%	3.4%	0.5%	2.3%	2.7%	**2.5%**
2016	19.4	19.4	20.8	20.7	21.0	21.0	20.5	21.2	20.5	21.0	19.7	20.0	**245.0**
Change	2.0%	16.2%	3.8%	0.9%	2.6%	0.4%	-1.9%	3.6%	2.7%	1.9%	4.7%	0.3%	**2.9%**
2017	19.4	18.6	21.4	20.3	21.5	21.0	20.4	21.2					**163.9**
Change	0.3%	-3.7%	2.9%	-1.5%	2.5%	0.3%	-0.4%	-0.2%					

Table 2-9. Monthly Transaction Trends – Sam Rayburn Tollway (millions)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2008	--	--	--	--	--	--	--	--	4.6	4.9	4.7	5.0	**19.2**
2009	4.7	4.6	5.2	5.4	5.6	5.8	6.0	5.9	6.0	6.7	6.6	6.9	**69.5**
Change	--	--	--	--	--	--	--	--	30.2%	35.2%	42.2%	38.4%	**262.0%**
2010	6.5	6.1	7.3	7.3	7.7	7.7	7.8	7.9	7.5	7.9	7.5	8.1	**89.3**
Change	37.2%	32.1%	38.5%	35.3%	38.3%	32.5%	30.5%	33.8%	23.9%	18.8%	13.8%	17.0%	**28.5%**
2011	7.5	6.5	8.3	8.2	8.6	8.7	8.5	8.7	8.3	8.6	8.4	8.9	**99.4**
Change	16.7%	5.5%	14.9%	11.8%	11.8%	12.8%	9.4%	10.1%	11.3%	9.0%	11.7%	11.0%	**11.3%**
2012	8.6	8.5	9.2	9.1	9.7	9.7	9.5	9.8	9.1	9.8	9.3	9.3	**111.6**
Change	14.4%	30.9%	10.2%	11.7%	13.3%	11.4%	11.2%	12.4%	9.2%	13.1%	10.1%	4.4%	**12.3%**
2013	9.2	8.8	9.9	9.9	10.4	10.3	10.4	10.8	10.1	10.7	10.0	9.4	**120.0**
Change	6.4%	4.1%	7.7%	8.6%	6.9%	6.4%	9.2%	10.3%	10.8%	9.9%	8.2%	1.0%	**7.5%**
2014	10.3	9.4	10.7	11.0	11.5	11.3	11.4	11.5	11.0	11.7	10.6	11.3	**131.6**
Change	11.6%	6.6%	8.0%	10.6%	10.9%	9.7%	9.8%	6.7%	9.2%	8.9%	5.5%	19.9%	**9.7%**
2015	10.8	9.5	11.6	11.8	12.2	12.5	12.7	12.5	12.0	12.3	11.5	12.4	**141.8**
Change	5.6%	0.6%	8.1%	7.9%	5.9%	11.0%	11.1%	8.3%	9.1%	5.7%	9.1%	9.2%	**7.7%**
2016	11.8	11.7	12.7	12.6	13.1	13.1	13.1	13.2	12.6	13.1	12.4	12.9	**152.4**
Change	9.1%	23.5%	10.1%	6.6%	7.4%	4.9%	3.3%	5.7%	5.2%	6.2%	7.9%	4.2%	**7.5%**
2017	12.3	11.7	13.5	13.2	14.1	13.8	13.5	13.9					**106.0**
Change	3.8%	0.6%	6.4%	4.4%	7.4%	5.1%	3.1%	5.3%					

Table 2-10. Monthly Transaction Trends – PGBT Eastern Extension (millions)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2011	--	--	--	--	--	--	--	--	--	--	--	0.7	**0.7**
2012	1.9	1.8	2.0	2.0	2.2	2.1	2.1	2.2	2.0	2.2	2.1	2.2	**24.7**
Change	--	--	--	--	--	--	--	--	--	--	--	236.6%	**3686.9%**
2013	2.1	2.0	2.3	2.3	2.5	2.4	2.4	2.5	2.3	2.5	2.4	2.3	**27.8**
Change	12.4%	11.9%	14.1%	16.1%	14.0%	13.8%	14.3%	15.0%	14.0%	14.1%	11.5%	4.0%	**12.9%**
2014	2.4	2.2	2.5	2.5	2.7	2.5	2.6	2.6	2.5	2.7	2.5	2.7	**30.2**
Change	13.1%	6.8%	7.1%	9.9%	8.7%	6.6%	8.0%	4.6%	7.7%	7.6%	4.3%	17.6%	**8.4%**
2015	2.5	2.2	2.6	2.8	2.9	2.9	2.9	2.9	2.8	2.9	2.7	3.0	**33.1**
Change	7.0%	1.8%	7.7%	10.5%	6.9%	13.5%	13.3%	11.1%	12.3%	8.9%	9.7%	12.5%	**9.7%**
2016	2.9	2.8	3.0	3.0	3.2	3.1	3.0	3.1	3.0	3.1	3.0	3.1	**36.3**
Change	13.7%	27.8%	14.1%	8.3%	10.6%	7.7%	4.6%	7.6%	7.3%	6.3%	9.2%	2.3%	**9.5%**
2017	2.9	2.8	3.2	3.1	3.3	3.2	3.1	3.2					**24.6**
Change	0.9%	-1.9%	6.2%	1.7%	4.3%	1.6%	1.1%	1.8%					

Table 2-11. Monthly Transaction Trends – Chisholm Trail Parkway (millions)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2014	--	--	--	--	0.6	0.9	1.0	1.2	1.3	1.4	1.4	1.6	**9.5**
2015	1.7	1.5	1.8	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.1	2.3	**24.3**
Change	--	--	--	--	269.2%	122.9%	102.4%	79.5%	70.3%	60.9%	46.7%	40.9%	**154.7%**
2016	2.2	2.3	2.4	2.4	2.5	2.4	2.4	2.5	2.6	2.7	2.6	2.7	**29.8**
Change	34.1%	50.8%	33.7%	23.7%	20.8%	17.3%	13.7%	18.7%	17.6%	16.8%	21.9%	16.2%	**22.7%**
2017	2.6	2.5	2.9	2.8	3.0	2.9	2.7	3.0					**22.5**
Change	17.3%	12.5%	20.7%	16.6%	20.6%	16.6%	14.0%	16.5%					

Table 2-12. Monthly Transaction Trends – PGBT Western Extension (millions)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2009	--	--	--	--	--	--	--	0.5	0.5	0.5	0.5	0.6	**2.6**
2010	0.5	0.5	0.7	0.7	0.8	0.9	0.9	0.9	0.9	1.0	0.9	0.9	**9.6**
Change	--	--	--	--	--	--	--	98.3%	84.2%	75.7%	69.2%	58.5%	**271.8%**
2011	0.9	0.7	1.0	1.0	1.0	1.0	1.0	1.1	1.0	1.0	1.0	1.0	**11.7**
Change	56.7%	38.9%	43.6%	32.8%	23.9%	21.8%	16.2%	16.2%	13.8%	9.0%	7.3%	8.9%	**21.7%**
2012	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.9	2.5	2.6	**16.7**
Change	12.9%	32.5%	8.7%	9.7%	13.8%	8.9%	6.8%	7.1%	4.0%	85.3%	155.2%	170.3%	**42.6%**
2013	2.8	2.8	3.2	3.3	3.6	3.4	3.5	3.7	3.5	3.7	3.4	3.1	**40.1**
Change	188.1%	183.6%	200.5%	205.7%	211.4%	201.5%	224.7%	219.7%	224.8%	93.7%	37.8%	18.8%	**139.6%**
2014	3.5	3.3	3.8	4.1	4.2	4.1	4.2	4.2	4.1	4.4	3.9	4.1	**48.0**
Change	25.0%	18.4%	19.9%	23.2%	16.9%	21.0%	18.3%	14.2%	19.6%	17.5%	13.4%	31.6%	**19.7%**
2015	4.0	3.6	4.4	4.5	4.6	4.8	4.8	4.7	4.8	5.0	4.6	4.8	**54.6**
Change	14.8%	7.5%	14.3%	10.6%	10.5%	15.2%	14.3%	12.9%	15.0%	14.0%	18.0%	17.7%	**13.8%**
2016	4.7	4.8	5.2	5.2	5.2	5.3	5.1	5.4	5.2	5.3	5.0	5.0	**61.2**
Change	16.1%	33.1%	18.1%	13.3%	12.6%	10.9%	7.4%	13.7%	8.6%	5.3%	8.4%	3.9%	**12.0%**
2017	4.8	4.7	5.4	5.2	5.4	5.4	5.2	5.5					**41.5**
Change	3.5%	-1.7%	4.1%	0.3%	3.9%	1.4%	0.6%	1.5%					

Table 2-13. Monthly Transaction Trends – NTTA System (millions)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007	29.1	28.9	32.9	31.8	33.3	32.1	32.1	33.9	31.1	34.4	32.1	32.1	**383.7**
2008	32.6	32.0	33.0	34.0	34.2	32.8	33.3	33.1	36.5	38.9	35.0	37.0	**412.3**
Change	12.1%	10.6%	0.3%	6.9%	2.6%	2.2%	3.7%	-2.4%	17.1%	13.3%	9.1%	15.5%	**7.5%**
2009	35.4	34.7	37.9	38.3	38.6	38.9	38.8	39.6	38.1	40.5	38.1	39.5	**458.4**
Change	8.6%	8.5%	15.1%	12.7%	12.9%	18.6%	16.7%	19.8%	4.4%	4.0%	8.8%	6.6%	**11.2%**
2010	37.7	35.8	41.8	41.8	42.2	42.1	41.9	42.8	41.0	43.3	40.6	42.7	**493.7**
Change	6.5%	3.1%	10.3%	9.2%	9.3%	8.1%	7.9%	8.0%	7.7%	6.9%	6.6%	8.2%	**7.7%**
2011	40.5	34.9	45.3	44.4	45.2	45.4	43.9	46.1	44.5	46.2	44.2	46.5	**527.1**
Change	7.4%	-2.6%	8.2%	6.2%	7.0%	7.9%	4.9%	7.6%	8.6%	6.8%	8.9%	8.8%	**6.8%**
2012	47.7	46.9	50.6	49.6	52.5	51.2	50.3	52.3	48.4	53.3	50.8	50.9	**604.5**
Change	17.7%	34.5%	11.8%	11.7%	16.1%	12.8%	14.6%	13.4%	8.7%	15.4%	14.9%	9.5%	**14.7%**
2013	51.1	49.3	54.8	54.8	57.4	55.3	55.6	58.1	54.4	58.4	53.6	49.8	**652.5**
Change	7.1%	5.0%	8.3%	10.6%	9.3%	7.9%	10.5%	11.1%	12.4%	9.5%	5.6%	-2.0%	**7.9%**
2014	55.0	50.8	57.2	58.8	61.3	59.8	60.5	61.1	59.3	63.2	56.9	60.8	**704.7**
Change	7.6%	3.1%	4.4%	7.2%	6.8%	8.1%	8.8%	5.3%	9.1%	8.3%	6.2%	22.0%	**8.0%**
2015	59.2	52.1	62.8	64.2	65.1	66.1	66.3	65.7	64.1	66.4	60.9	65.1	**758.0**
Change	7.7%	2.6%	9.7%	9.2%	6.2%	10.6%	9.5%	7.5%	7.9%	5.0%	7.0%	7.1%	**7.6%**
2016	63.1	62.7	67.6	66.9	68.3	67.4	66.6	68.7	66.4	68.4	64.4	66.2	**796.7**
Change	6.5%	20.4%	7.6%	4.1%	4.9%	2.0%	0.5%	4.6%	3.6%	3.0%	5.7%	1.7%	**5.1%**
2017	64.0	61.4	70.3	67.0	71.1	68.9	67.3	69.4					**539.4**
Change	1.5%	-2.1%	4.0%	0.2%	4.2%	2.1%	1.0%	1.0%					

Average monthly transaction variations on the NTTA System facilities for 2016 are presented as an index of the monthly transactions, as illustrated in Table 2-14.

The peak travel months on the DNT in 2016 were March through October, while the lightest travel months on the DNT were February and November. Traffic volumes were below the 2016 average in January, February, June, July, September and November (monthly variations for these months ranged from one to four percent below the average). Traffic variations were one to three percent greater than the average in the remaining months.

The PGBT experienced above average transactions from March through October in 2016. The PGBT saw its lowest number of transactions in February. On the PGBT EE, travel peaked in May at four percent above the monthly average for the year. The SRT saw its peak month in August, with transactions at four percent higher than the annual average. Both the SRT and PGBT EE were at their lowest traffic levels in February, dropping six to eight percent below the annual average.

Peak travel on the PGBT WE in 2016 occurred June and August, during which transactions were four and five percent above the annual average, respectively. The lowest traveled month on PGBT WE in 2016 was January. The CTP experienced its lowest traffic in January and the highest transactions of the year in October. Both the AATT and LLTB experienced their highest traffic volumes in the summer months, while the MCLB experience its highest level of demand in April.

Table 2-14. NTTA System Monthly Transaction Index in 2016

Month	DNT	PGBT	SRT	PGBT EE	PGBT WE	CTP	AATT	MCLB	LLTB
January	98	95	93	95	91	90	99	92	88
February	96	95	92	94	93	91	100	100	88
March	103	102	100	100	102	98	105	105	96
April	102	101	99	99	101	98	99	107	97
May	103	103	103	104	102	101	100	105	101
June	99	103	103	103	104	99	105	95	102
July	99	100	103	100	101	97	107	91	104
August	102	104	104	103	105	103	103	99	106
September	99	101	100	100	102	104	99	104	104
October	102	103	103	103	104	109	99	105	110
November	96	96	98	98	97	104	91	102	101
December	100	98	101	102	98	108	92	95	102
Average	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

AVI UTILIZATION TRENDS

As mentioned previously, the TollTag program has been successful in terms of increased participation since its introduction in July 1989. Current levels of AVI transaction shares for NTTA System facilities are presented in Figure 2-9. The AVI transaction shares shown represent the levels by month beginning in January 2015, and include VToll transactions with an assumed 90-day lag. As shown in Figure 2-7, the average AVI share across all NTTA System facilities has been trending upward and has consistently been above 80 percent since late 2016.

Figure 2-10 shows the spatial distribution of active TollTags across the Dallas-Fort Worth region from data in 2017. ZIP codes along the SRT and northern-most sections of the DNT have the highest concentration of the TollTags. Also, higher TollTag participation is seen in ZIP codes along the existing NTTA System corridors compared to the other parts of the region.

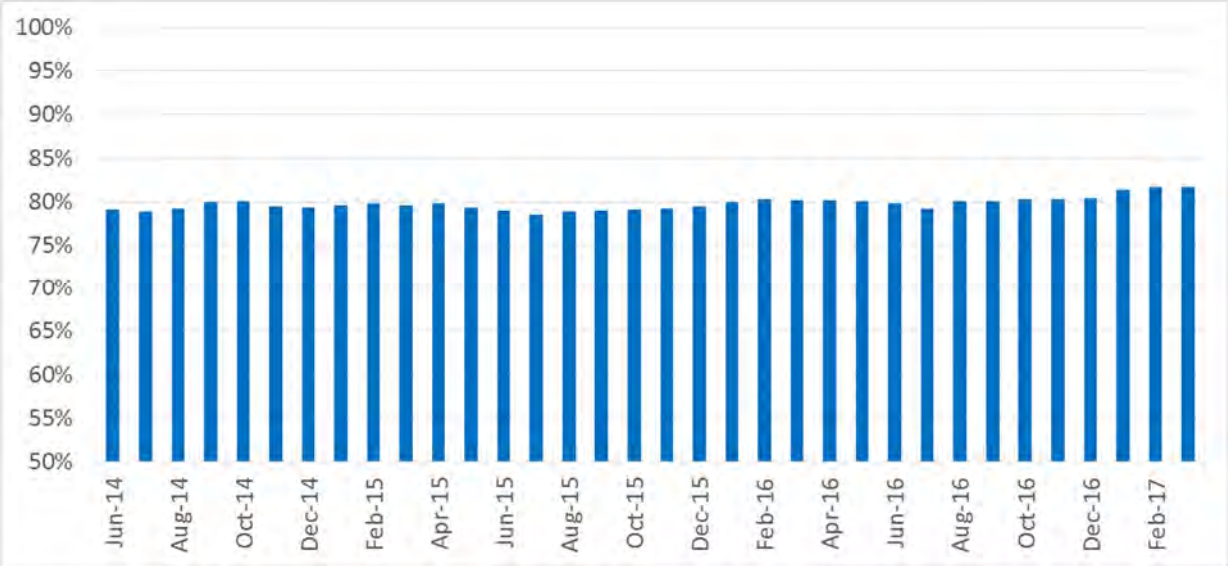


Figure 2-9.
Recent NTTA System Average Monthly AVI Share

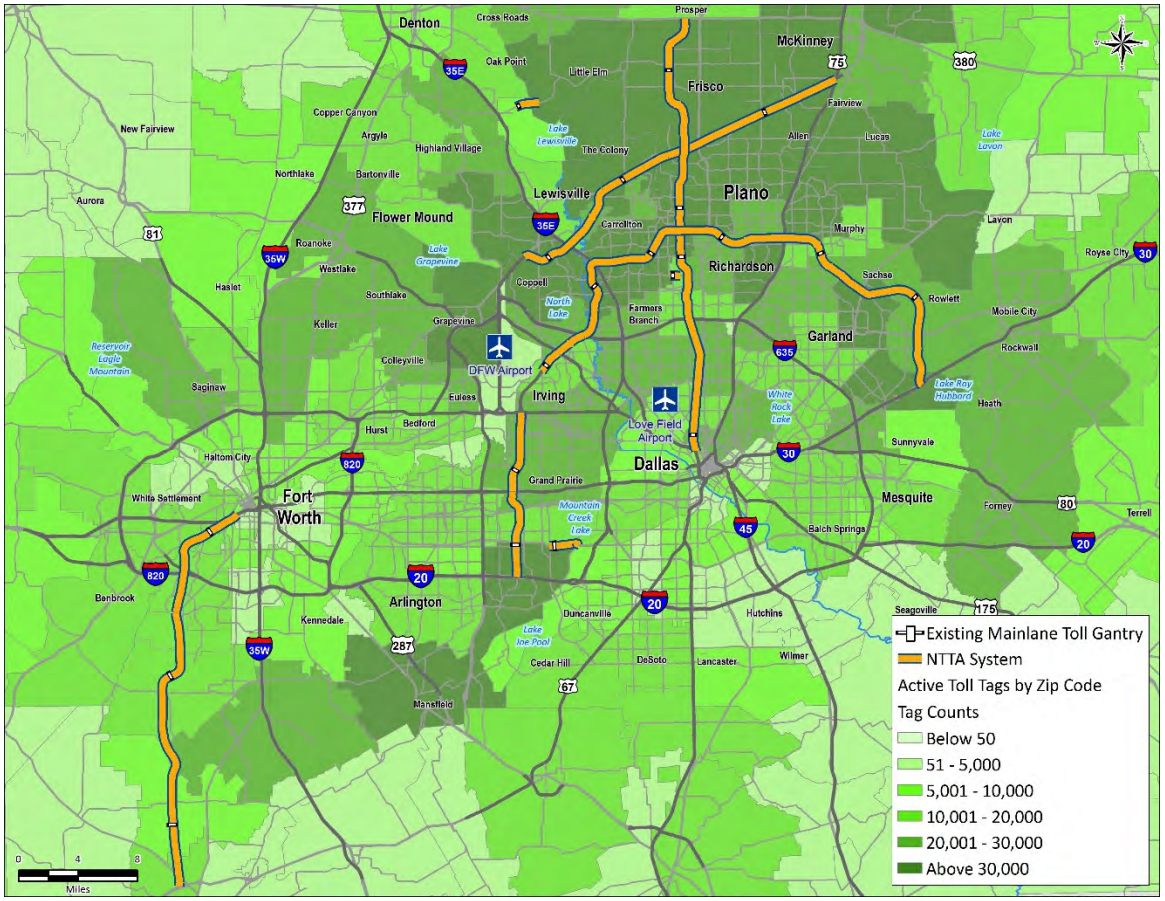


Figure 2-10.
TollTag Utilization by ZIP Code

TRAFFIC COUNT PROGRAM

CDM Smith embarked on a comprehensive traffic count program in the NTTA System area. This included counts along all NTTA System corridors. The traffic count program included a series of screenlines. The locations of the traffic count screenlines can be seen in Figures 2-11 through 2-13. Traffic counts from the transaction data were obtained from NTTA staff for all of the existing mainlane gantries and each of the ramp toll gantries on all NTTA facilities. In addition, traffic counts were collected at strategic locations along NTTA System corridors, such as the frontage roads along the toll facilities to assist with the base year model calibration.

To collect data for non-NTTA facilities along the screenlines and for the non-tolled ramps along the NTTA facilities, CDM Smith engaged GRAM Traffic NTX, a Dallas-based firm that is classified as a Woman-Owned Business Enterprises (WBE). All of the counts at non-tolled locations and on the screenlines were conducted for a continuous 48-hour period on interior weekdays only (Tuesday, Wednesday and Thursday). By combining the ramp transaction data and the counts on the non-tolled ramps, CDM Smith was able to build an average weekday traffic profile for the NTTA System area. The results of the traffic count program were then used to calibrate the travel demand model.

A summary of the screenline traffic volumes is presented in Table 2-15.

Table 2-15.Screenline Traffic Summary

Screenline Location	Screenline Total Traffic Count	Screenline Location	Screenline Total Traffic Count
Dallas North Tollway		**President George Bush Turnpike**	
Screenline 1	829,100	Screenline 5	175,500
Screenline 2	718,600	Screenline 6	375,200
Screenline 3	406,000	Screenline 7	438,700
Screenline 4	266,100	Screenline 8	310,300
Sam Rayburn Tollway		Screenline 9	346,000
Screenline S1	222,900	Screenline 10	344,200
Screenline S2	331,200	**Chisholm Trail Parkway**	
Screenline S3	414,700	Screenline C1	152,000
PGBT Western Extension		Screenline C2	75,400
Screenline W1	347,800	Screenline C3	354,300
Screenline W2	328,600	Screenline C4	276,200
Screenline W3	201,200	Screenline C5	287,100

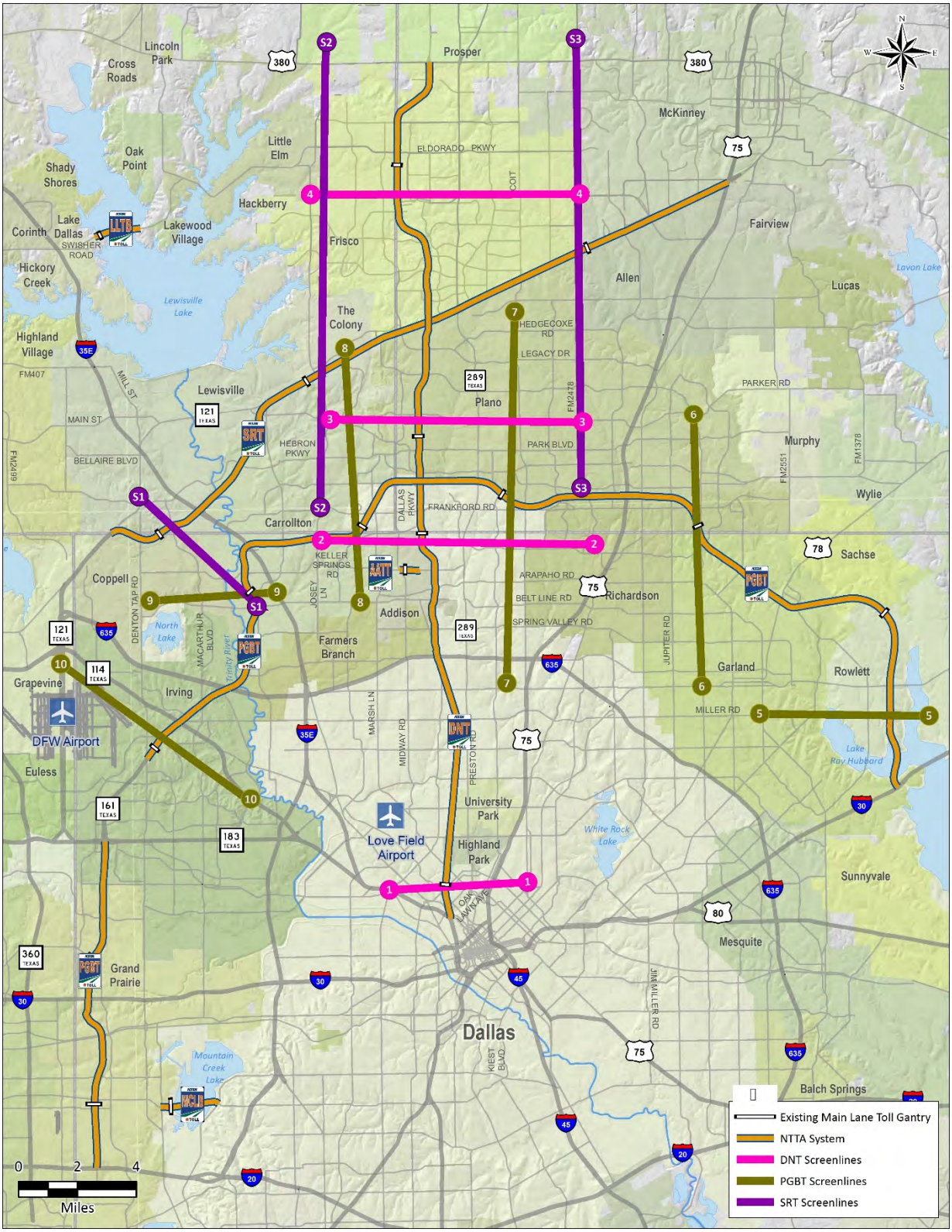


Figure 2-11.
DNT/PGBT/SRT Traffic Count Screenlines

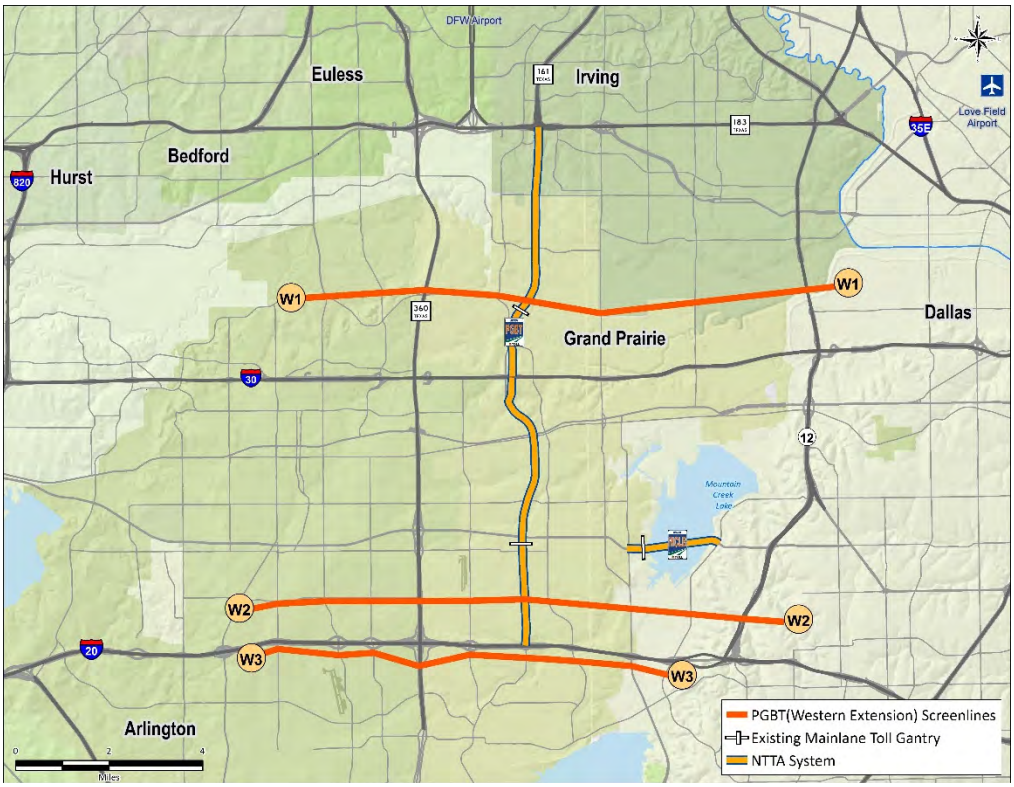


Figure 2-12.
PGBT WE Traffic Count Screenlines

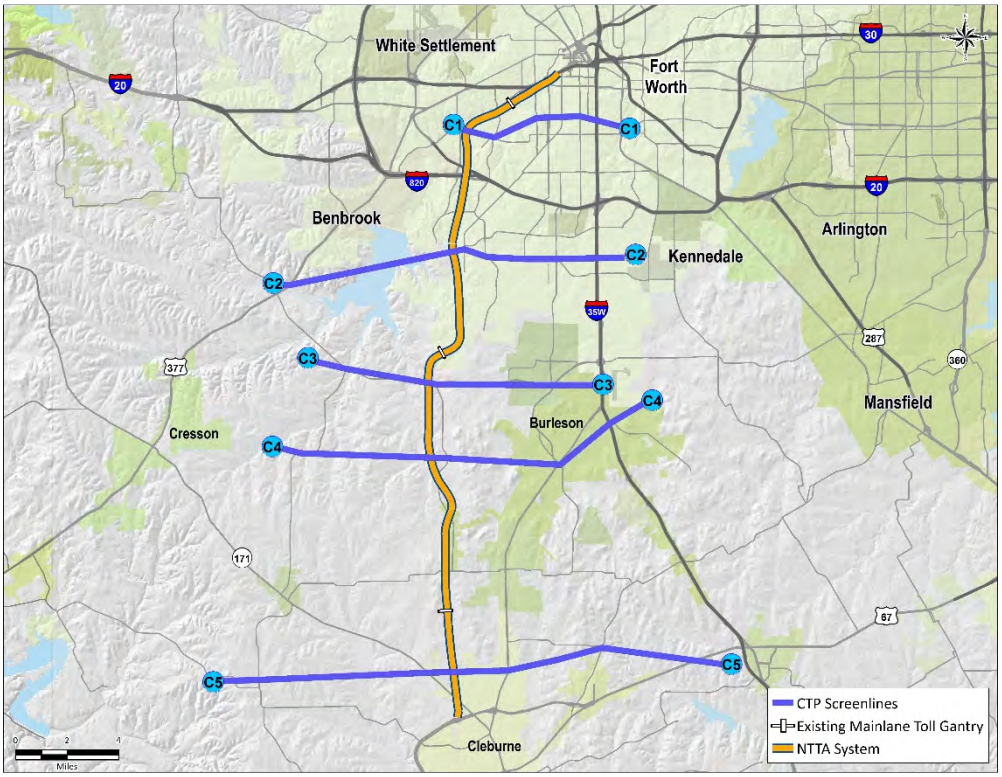


Figure 2-13.
CTP Traffic Count Screenlines

Figures 2-14 through 2-18 show the profile for both travel directions on the DNT, PGBT, SRT, PGBT WE and CTP for the AM, PM and off-peak (OP) time periods. The AM peak period is from 6:30 to 9:00 AM (2.5 hours), PM peak period is from 3:00 to 6:30 PM (3.5 hours), and the off-peak (OP) represents the remainder of the day (18 hours).

Dallas North Tollway

The northbound traffic during the PM peak period is higher than that in the AM peak and reflects the movement of traffic in the employment centers located along the southern and central portions of the DNT to the residential suburbs located along the northern segments of the DNT. During the PM peak, the highest volumes of traffic occur in the sections between MLP 2 and Legacy Drive. During the off-peak periods, highest volumes are seen between IH 635/LBJ and MLP 3. In the southbound direction, AM and PM peak traffic volumes seem to be similar south of Windhaven Parkway. The highest levels of traffic are experienced between IH 635/LBJ and MLP 3.

President George Bush Turnpike

In the eastbound travel direction, the PM peak period is generally higher than the AM peak period for the PGBT. This would also be expected because of the movements between employment centers along the DNT and the growing residential areas of Collin County. As a result, the highest volumes in both directions on PGBT were recorded between US 75 and the DNT.

Sam Rayburn Tollway

The eastbound travel direction indicates the PM peak period is higher than the AM peak period. In the westbound direction, the AM peak period is higher than the PM peak period for the section between DNT and Stacy Road. There is a noticeable spike in both directions for all time periods between Hebron Parkway and IH 35E. This spike is due to the fact that this section of the SRT is toll-free.

President George Bush Turnpike – Western Extension

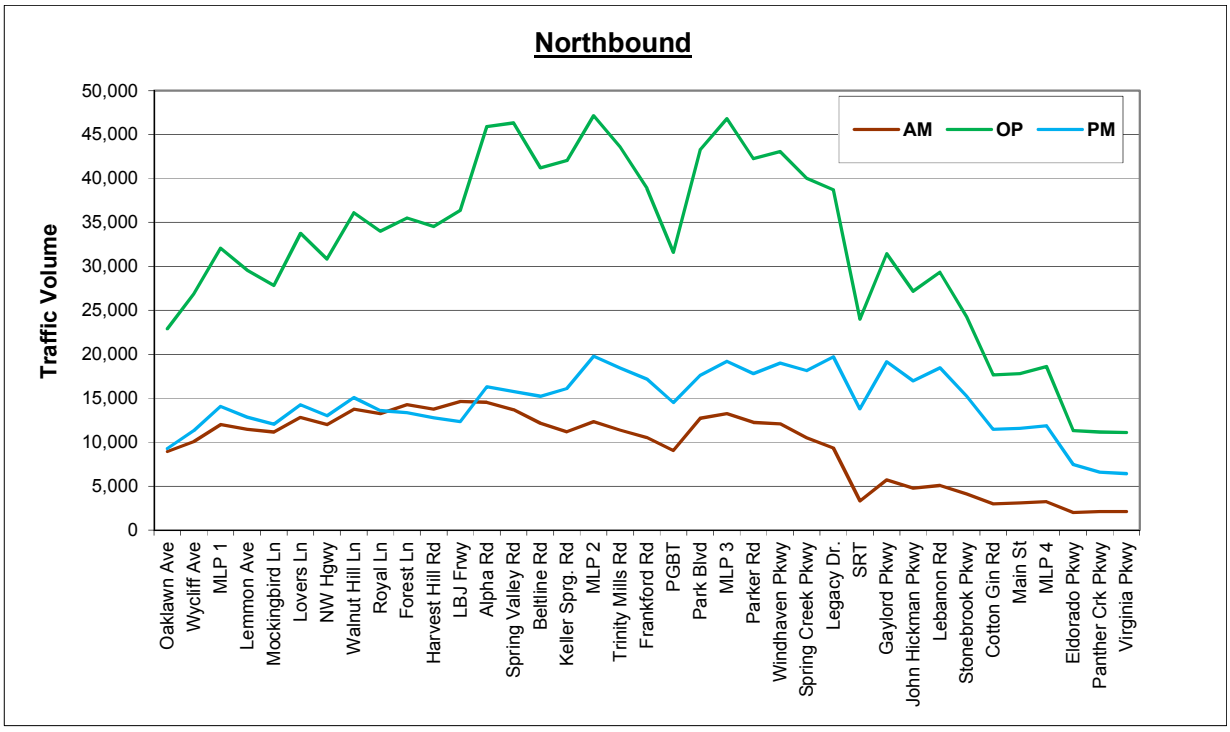
On PGBT WE, travel in both the northbound and southbound directions is much heavier for the segment north of IH 30. Throughout the day, volumes on PGBT WE north of IH 30 are generally about twenty-five percent higher north of IH 30 than south of IH 30. The highest volumes on PGBT WE occur near Oakdale Road.

Chisholm Trail Parkway

Traffic on CTP is much higher in both directions at the northern end of the facility than the southern end. The highest volumes occur near MLG #1, while the lowest volumes occur near MLG #3. Generally, volumes decline consistently further south on the facility. The highest volumes at the northern end of the facility are approximately five times as high as the lowest volumes at the southern end of the facility.

Average Weekday Transactions by Location

Figures 2-19 through 2-24 show the estimated average weekday transactions in 2017 at each tolling location on the DNT, PGBT, PGBT EE, SRT, AATT, MCLB, LLTB, PGBT WE and CTP. As would be expected, the mainlane gantries generated the highest number of transactions on each facility. Among the ramp tolling locations, the Mockingbird Lane ramps generated the most transactions on the DNT, while the Midway Road ramps and Firewheel Parkway ramps generated the most transactions on the PGBT and PGBT EE, respectively. On the SRT, the highest number of ramp transactions was generated at the Custer Road ramps. On PGBT WE and CTP, the highest number of ramp transactions were generated and Lower Tarrant Road and Oakmont Boulevard, respectively.



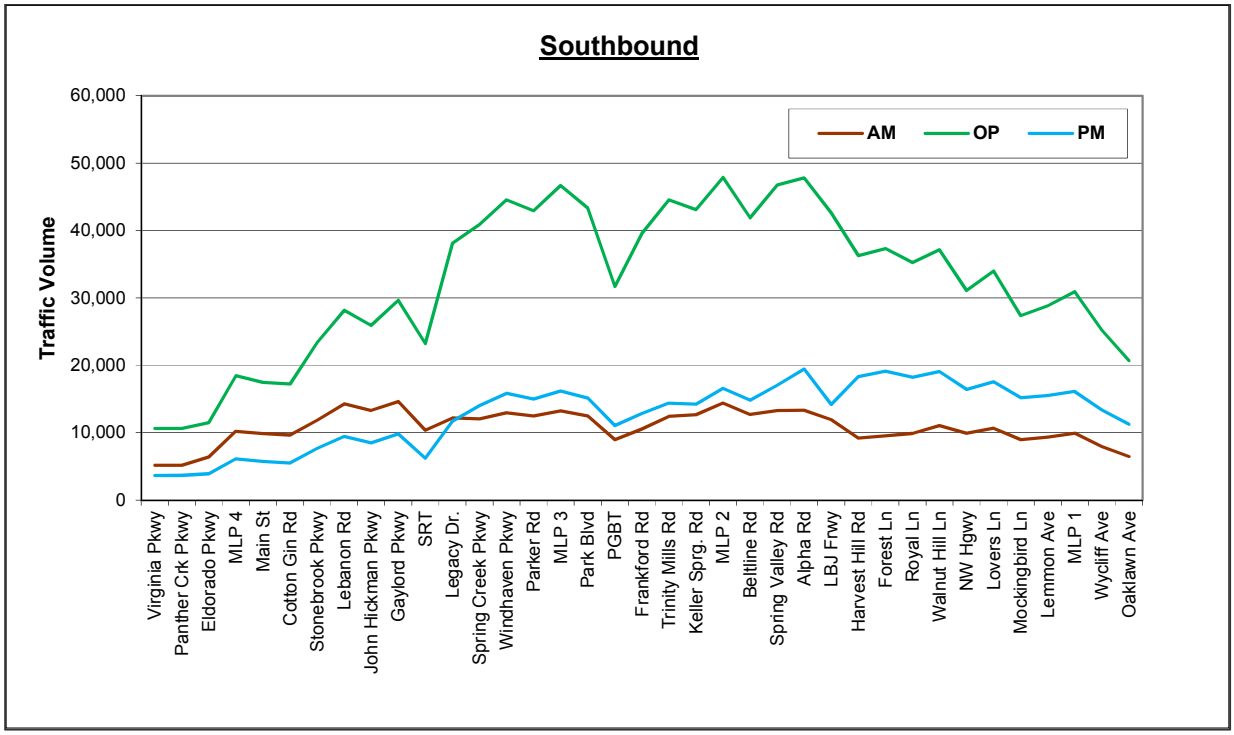
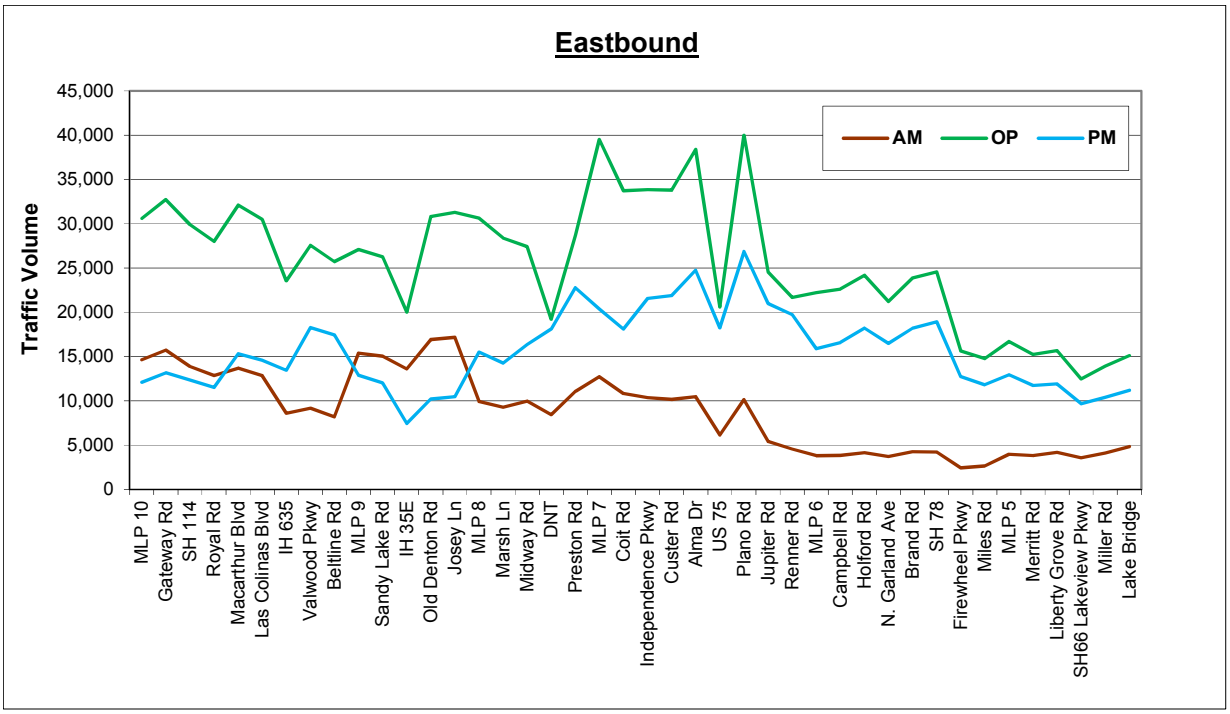


Figure 2-14.
DNT Traffic Volume Profile



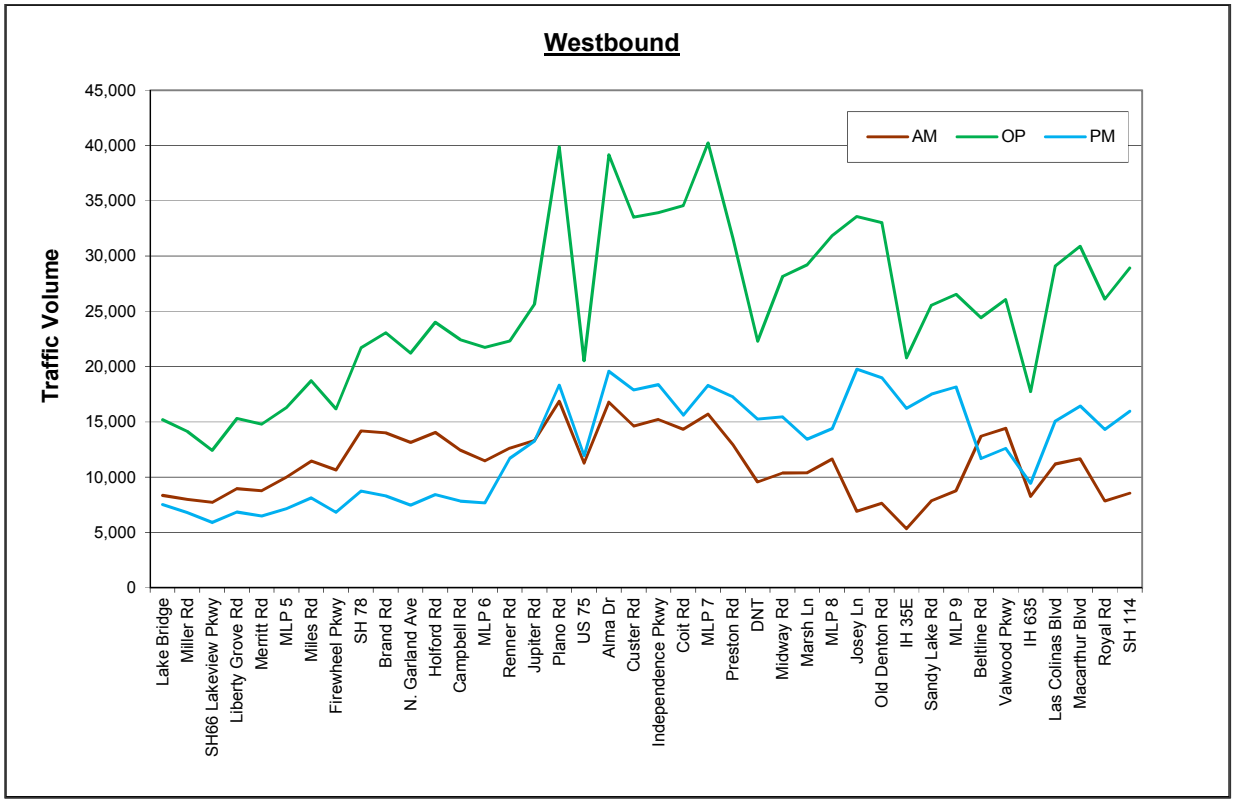
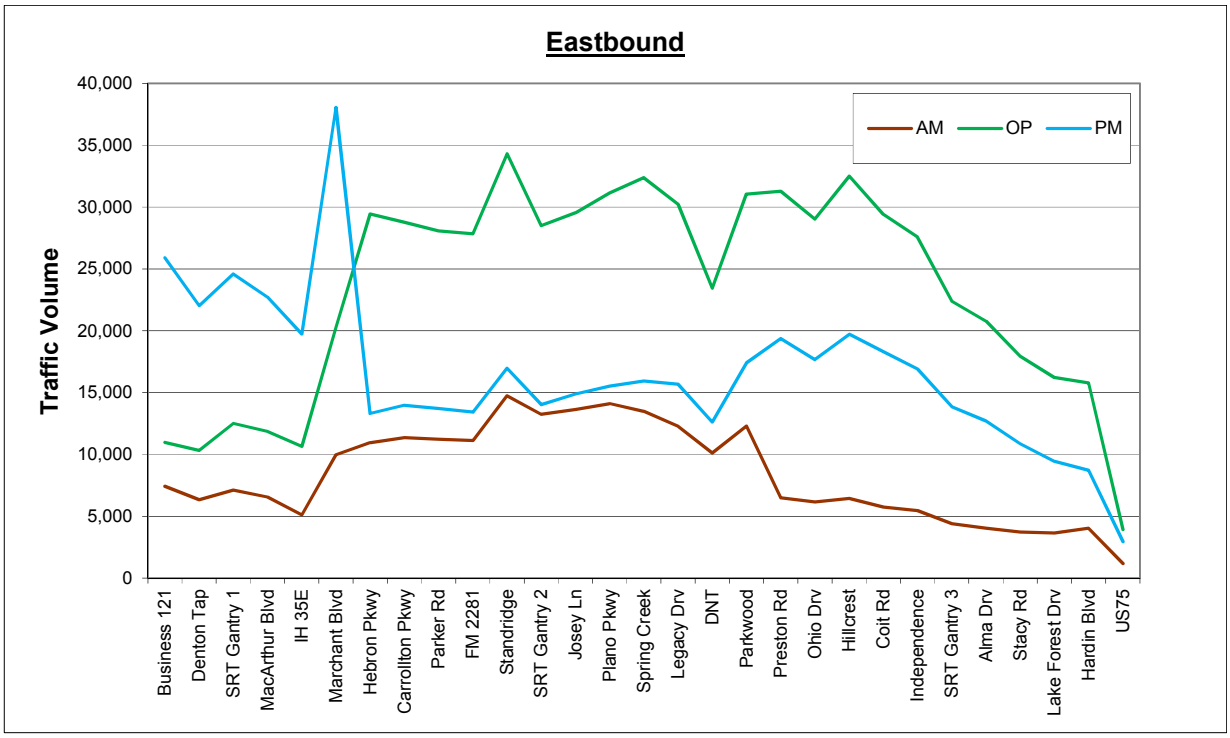


Figure 2-15.
PGBT Traffic Volume Profile



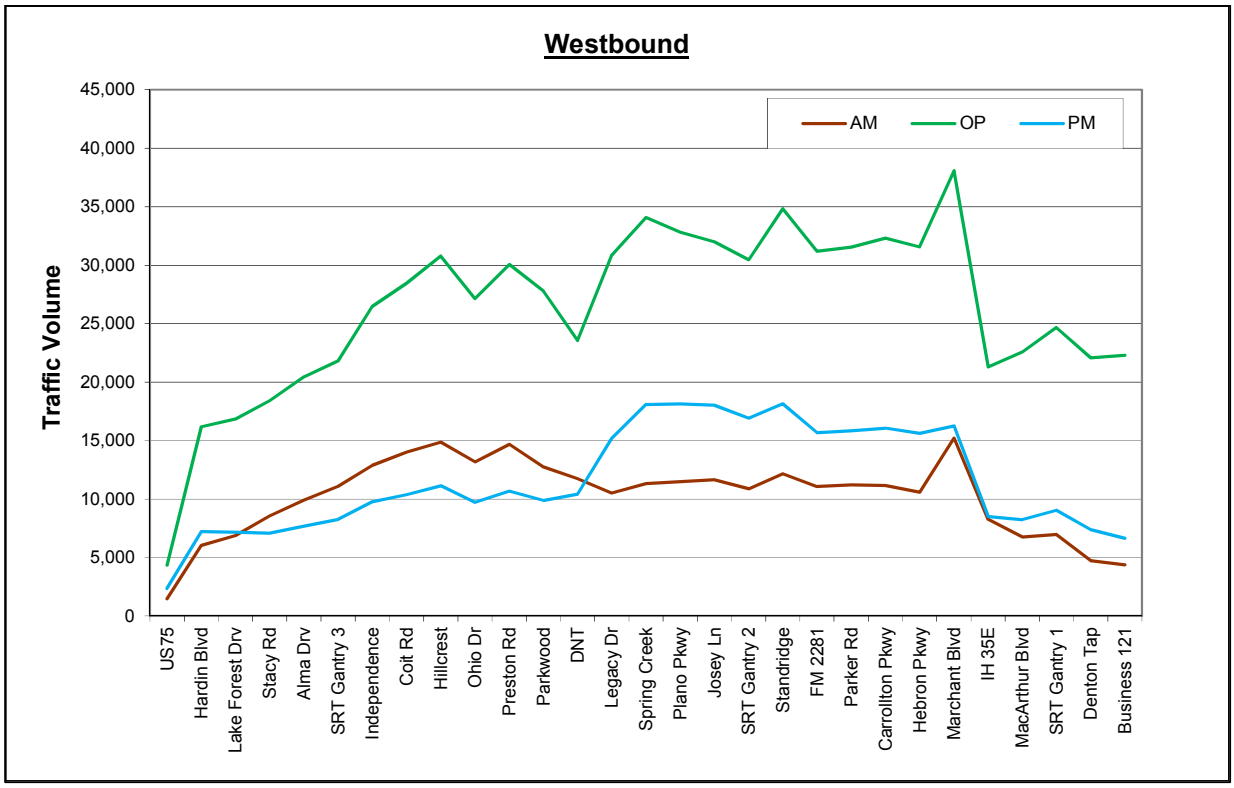
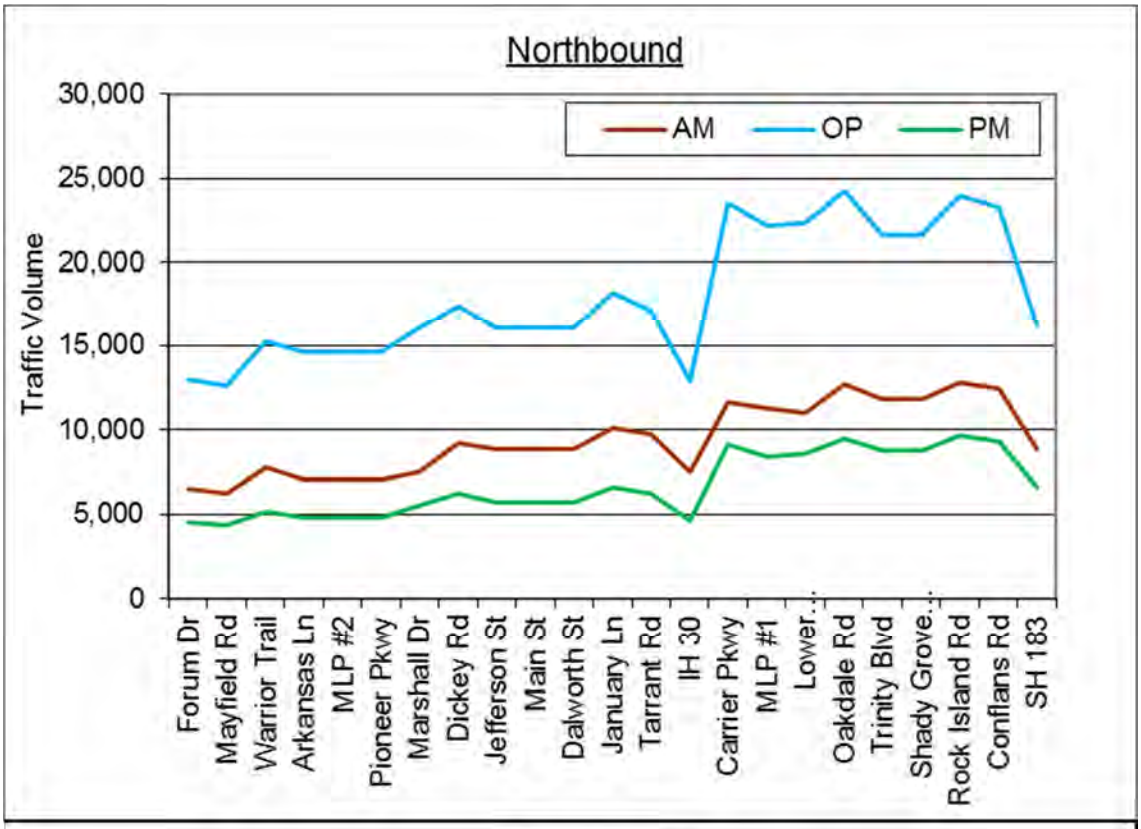


Figure 2-16.
SRT Traffic Volume Profile



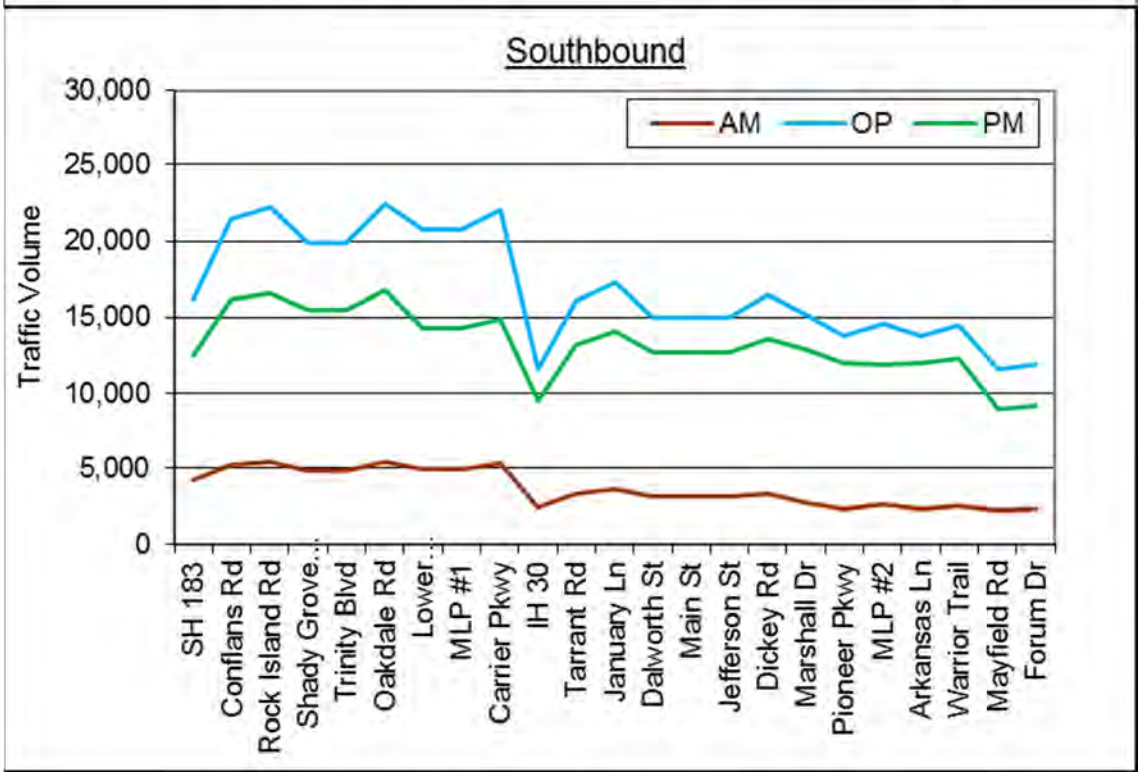


Figure 2-17.
PGBT WE Traffic Volume Profile

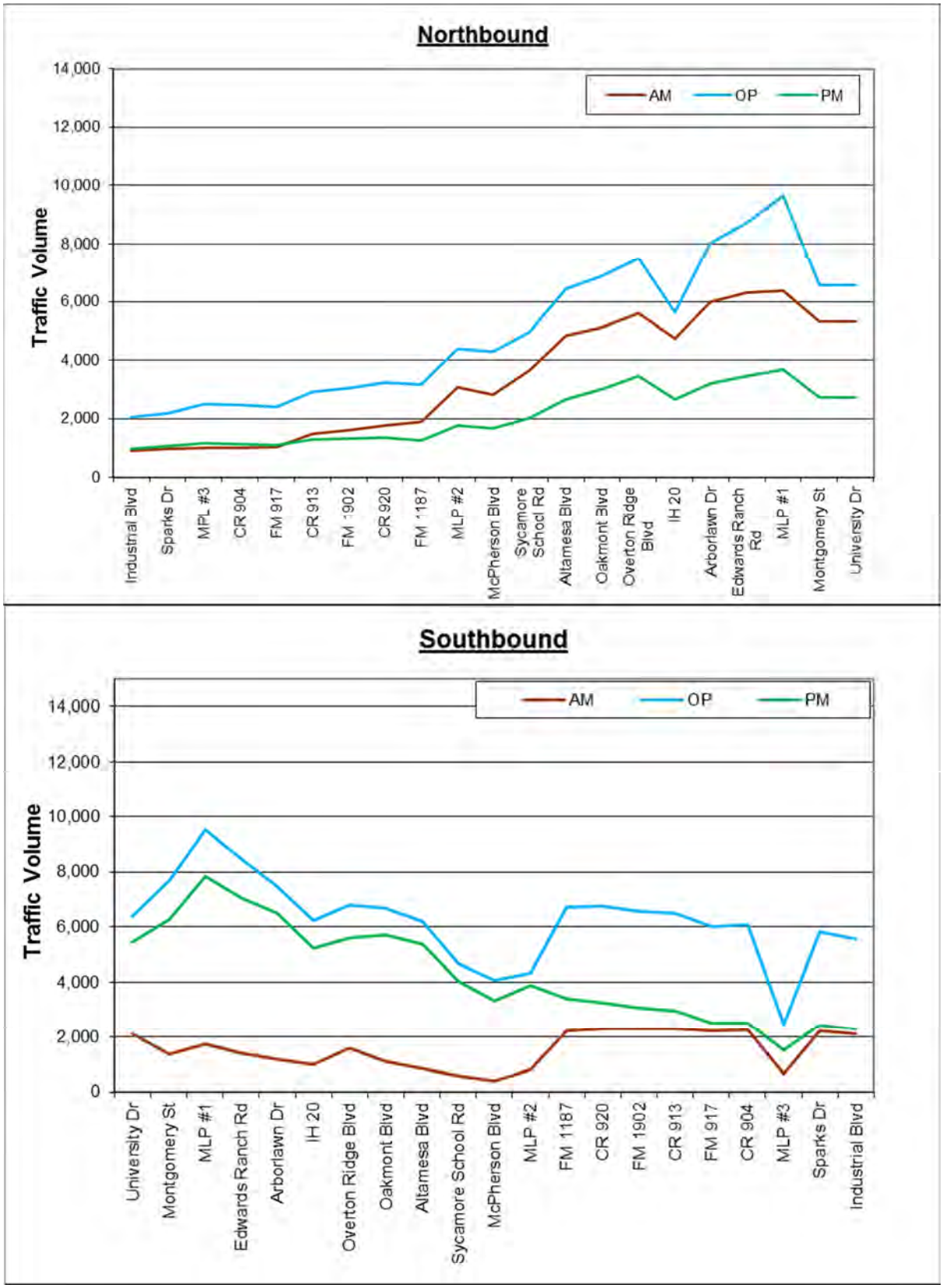


Figure 2-18.
CTP Traffic Volume Profile

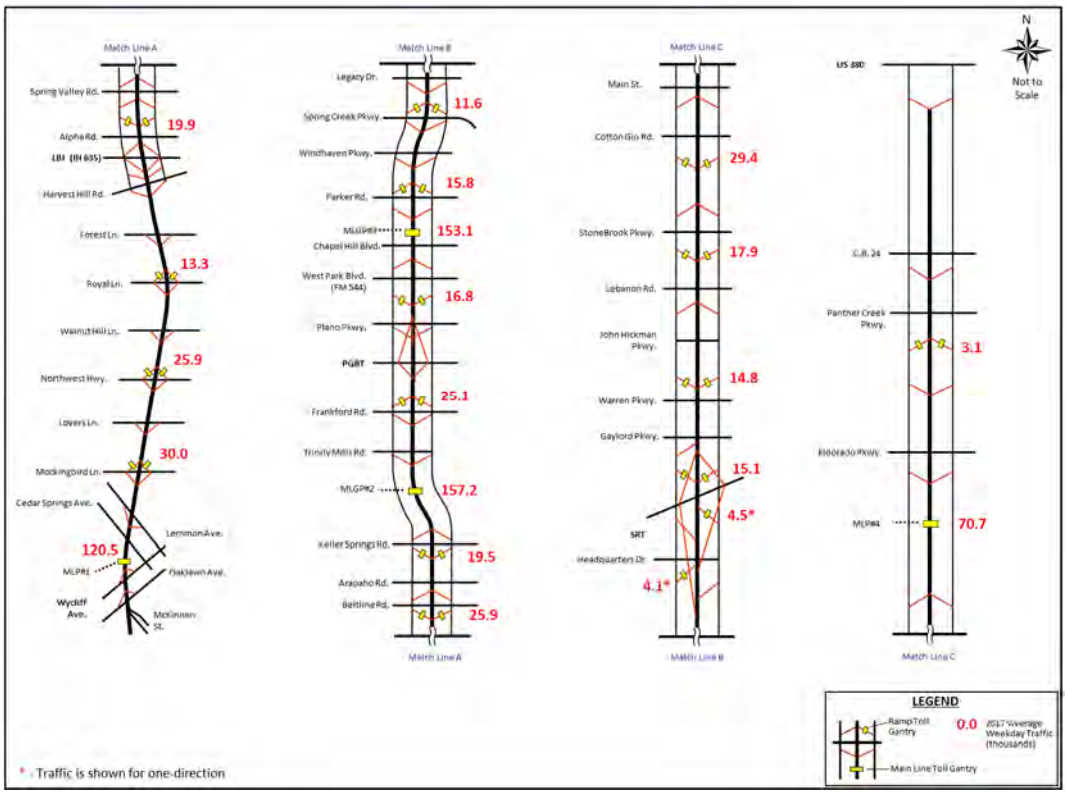


Figure 2-19.
DNT 2017 Average Weekday Transactions by Tolling Location

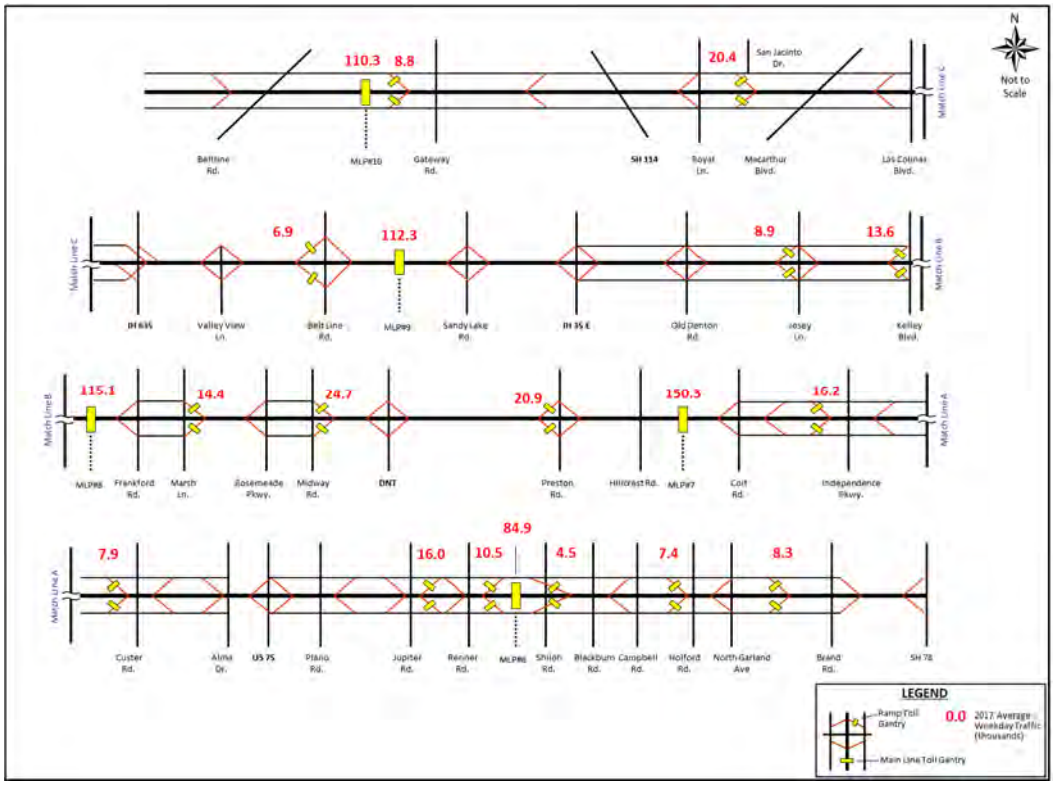


Figure 2-20.
PGBT 2017 Average Weekday Transactions by Tolling Location

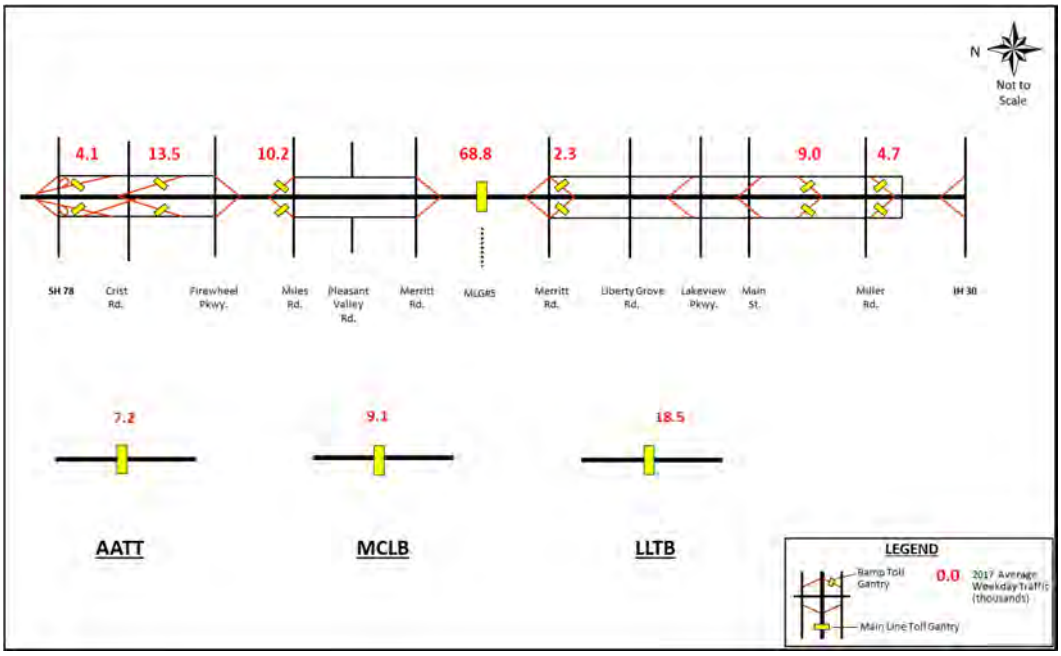


Figure 2-21.
PGBT EE, AATT, MCLB and LLTB 2017 Average Weekday Transactions by Tolling Location

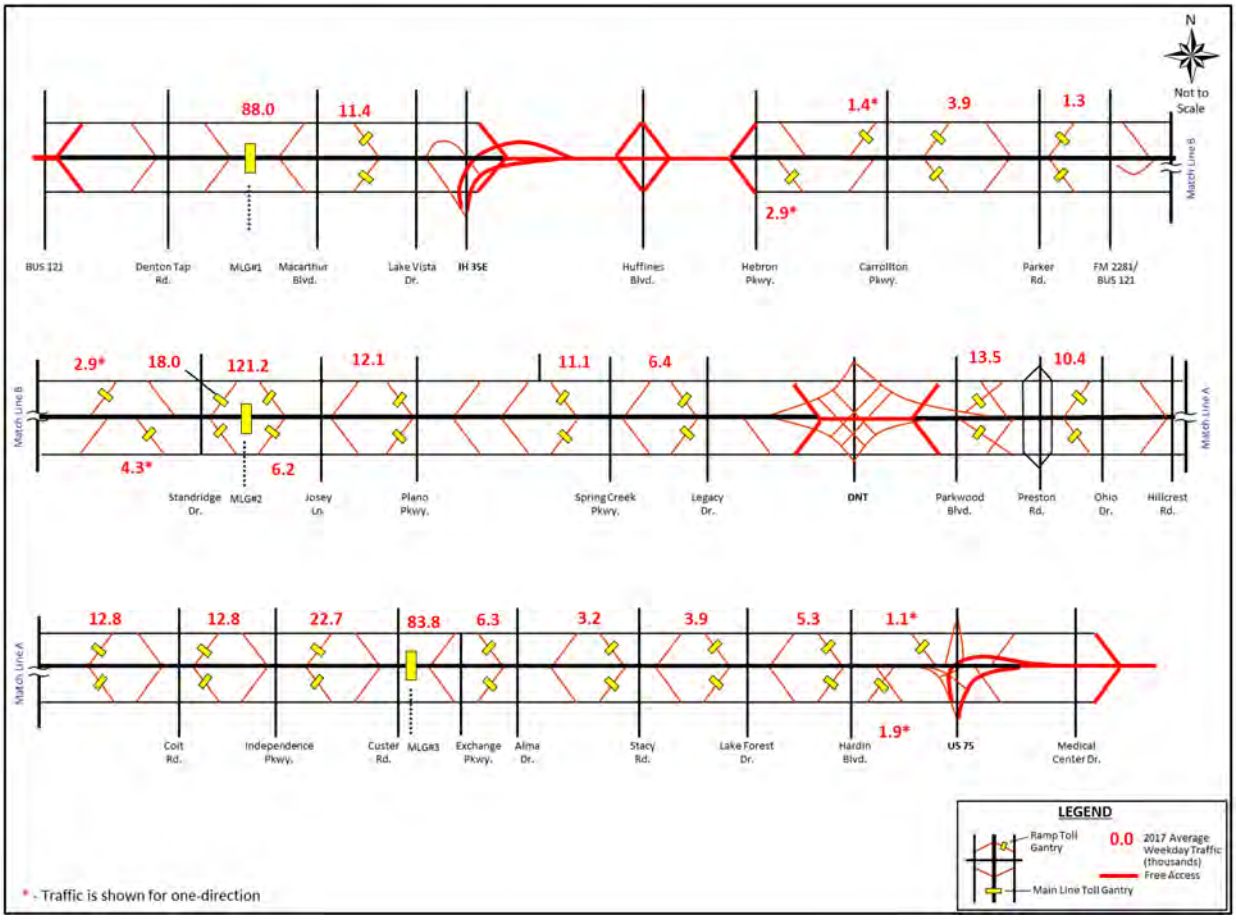


Figure 2-22.
SRT 2017 Average Weekday Transactions by Tolling Location

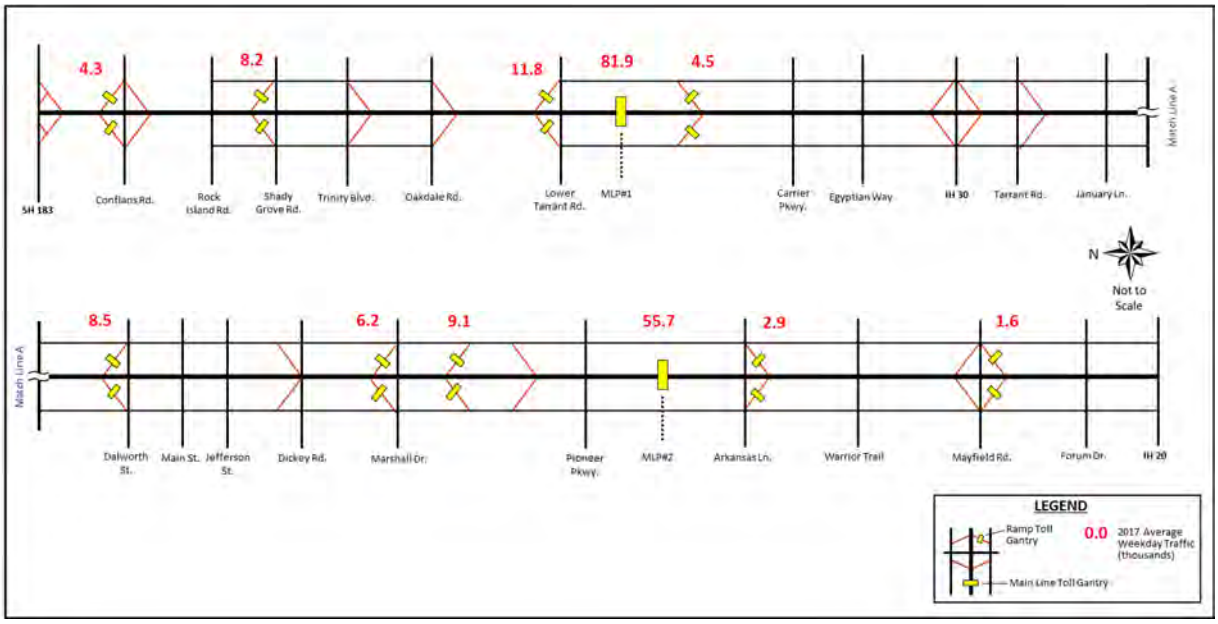


Figure 2-23.
PGBT WE 2017 Average Weekday Transactions by Tolling Location

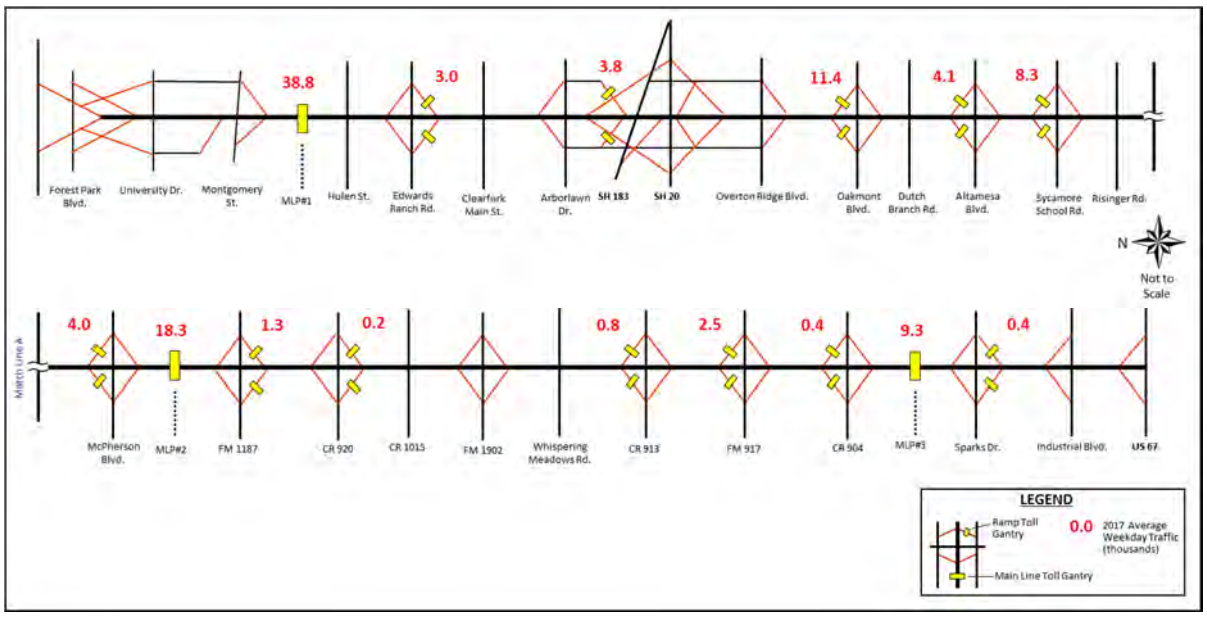


Figure 2-24.
CTP 2017 Average Weekday Transactions by Tolling Location

TRAVEL TIME CHARACTERISTICS

The evaluation of a toll facility's future traffic and revenue requires knowledge of the current travel time characteristics of the major roadways in the project area. For the current study, travel time data was collected by two methods. The primary source was historical travel data obtained from INRIX, Inc., a traffic data company based in Washington State that maintains an archive of travel speed data for thousands of roadways across the United States accumulated from GPS-enabled devices along the highway network. INRIX is a Data as a Service (DaaS) company that monitors traffic flow along approximately 260,000 miles of major freeways, highways, urban and rural arterials, and side streets in the United States. This data provides historical as well as real-time traffic data seven days a week, 24 hours a day in as little as 5 minute increments for all metro areas with a population of more than one million. They were engaged to provide a series of travel speed data for several roadways within the study area.

INRIX obtains its data via crowd sourcing and collects travel speed information from various probes; including anonymous cell phones/smartphones and vehicles equipped with GPS devices (trucks, delivery vans, transit vehicles, etc.). The collected data is then processed in real-time to create travel speed information along most of the major roadways. The real-time travel speed data is normalized to account for parameters that affect traffic flow conditions, such as weather forecasts, school schedules, special events, accidents, seasonal variation, and road construction.

For routes within the proposed study area currently not captured by INRIX, the data was supplemented using a GPS-based speed data collection method. The time and location of each field vehicle was gathered using a GPS device every one-twentieth of a mile, and the operating speeds were then calculated. In the process of collecting speed data, CDM Smith staff gathered additional information regarding the number of lanes, speed limits, school zone locations, type of facility (divided vs. undivided) traffic signal locations and other geometric characteristics of the facilities surveyed. This information was used to calibrate the output speeds from the travel demand model to the existing conditions on those highway facilities.

In addition to NTTA's toll facilities, travel time analysis was also conducted on several local arterials and frontage roads that compete directly with NTTA System facilities. Several highway and arterial routes were selected for analysis to provide a profile of the fluctuation in operating speed throughout the corridor and the relationship between demand and congestion levels. For the DNT, PGBT, PGBT EE and SRT corridors, INRIX data was summarized for March 2016, and the GPS-based data was collected in January 2016. For the PGBT WE and CTP corridors, INRIX and GPS-based data was collected in June 2017. Figures 2-25 through 2-30 show the locations for which travel time data was obtained.

The results are presented graphically in Figures 2-31 through 2-42. The figures illustrate the typical peak period speeds in each direction on various facilities. As expected, the DNT routes exhibit their slowest speeds in the southbound AM and northbound PM directions. The PGBT routes exhibit their slowest speeds in the westbound AM and eastbound PM directions. Similar to the PGBT, the SRT show slower speeds in the westbound direction in the AM peak and in the eastbound during the PM peak period. In both the PGBT WE and CTP corridors, slower speeds are experienced in the northbound direction during the AM peak period and in the southbound direction during the PM peak period.

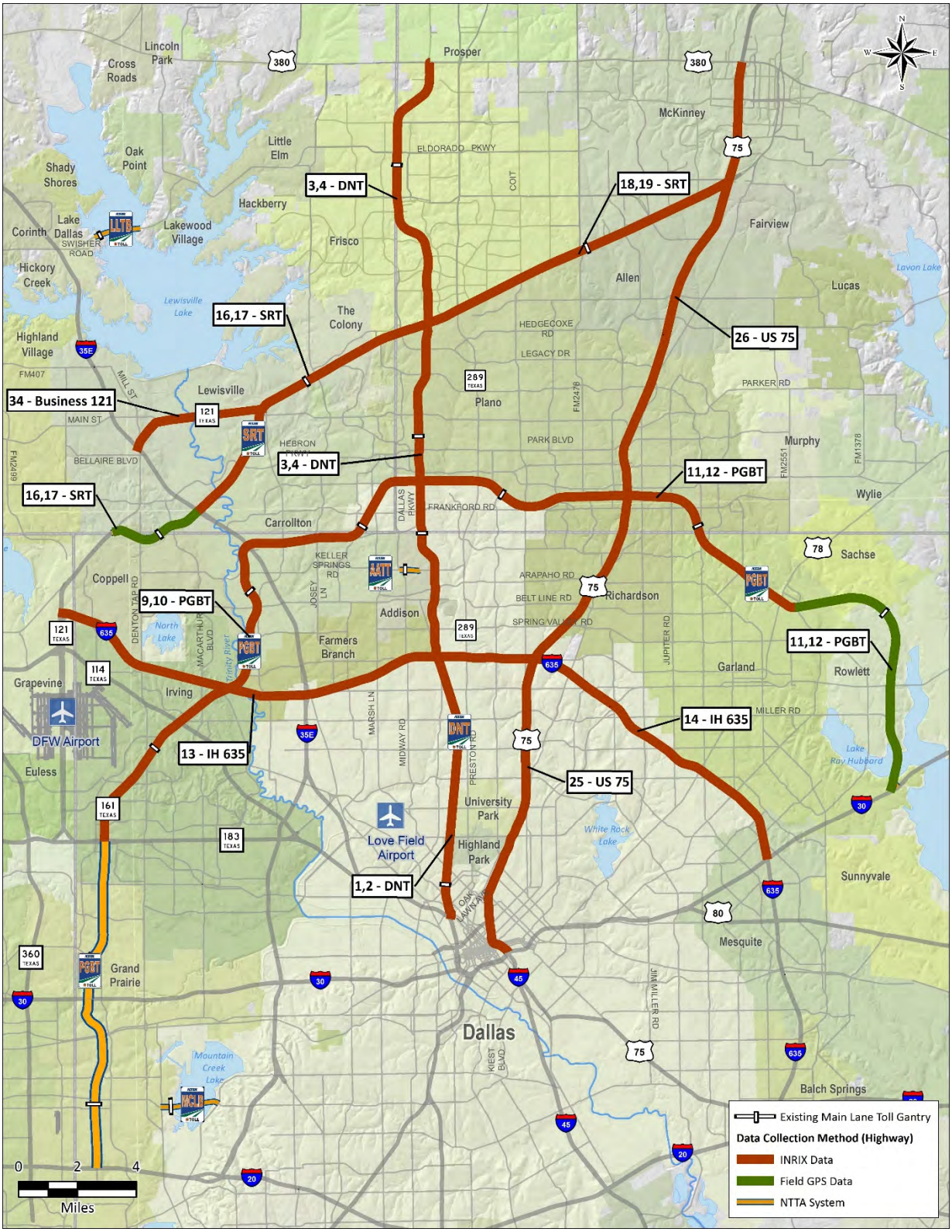


Figure 2-25.
DNT/PGBT/SRT Area Travel Speed Data Collection Locations (Highways)

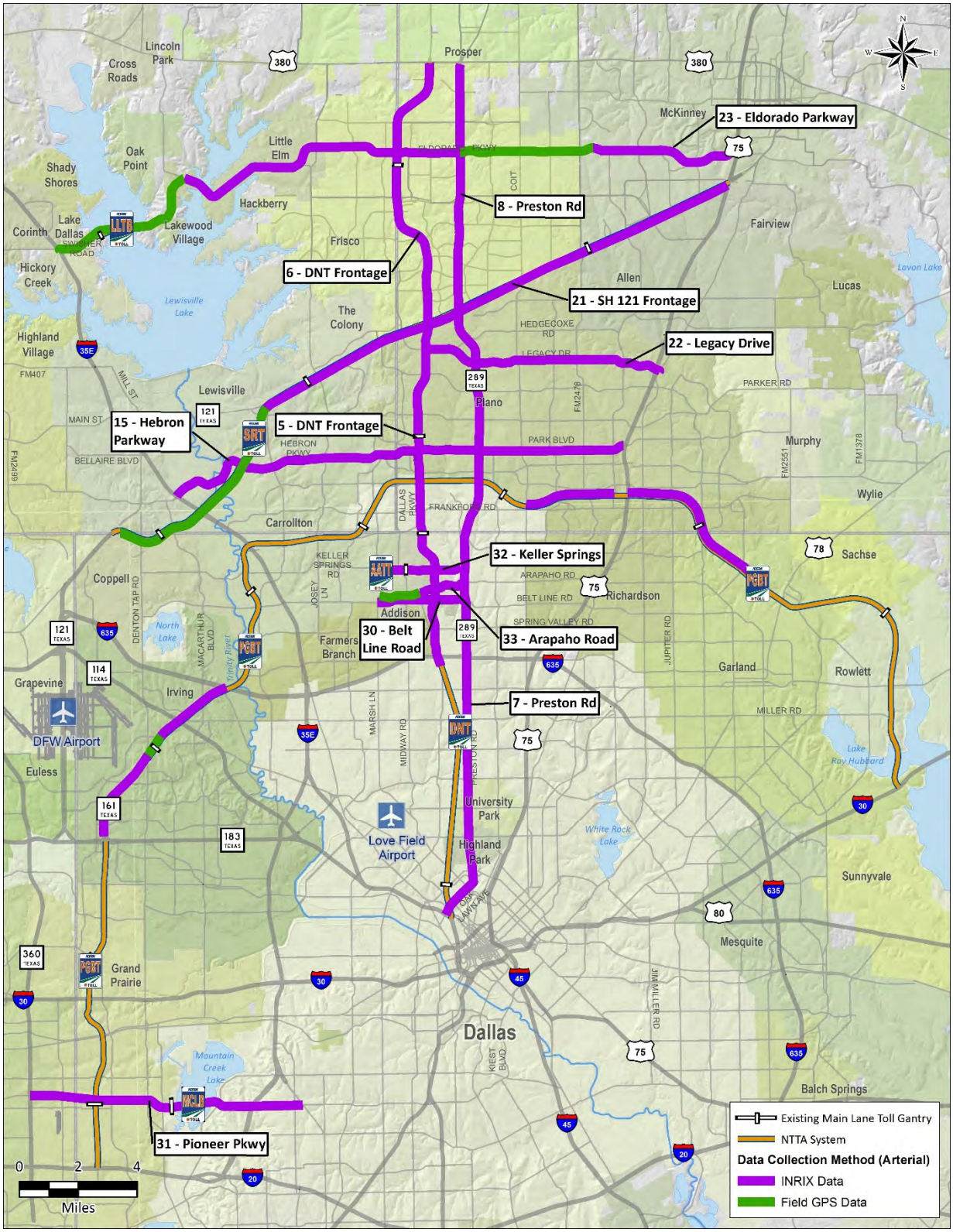


Figure 2-26.
DNT/PGBT/SRT Area Travel Speed Data Collection Locations (Arterials)

Figure 2-27.
PGBT WE Area Travel Speed Data Collection Locations (Highways)

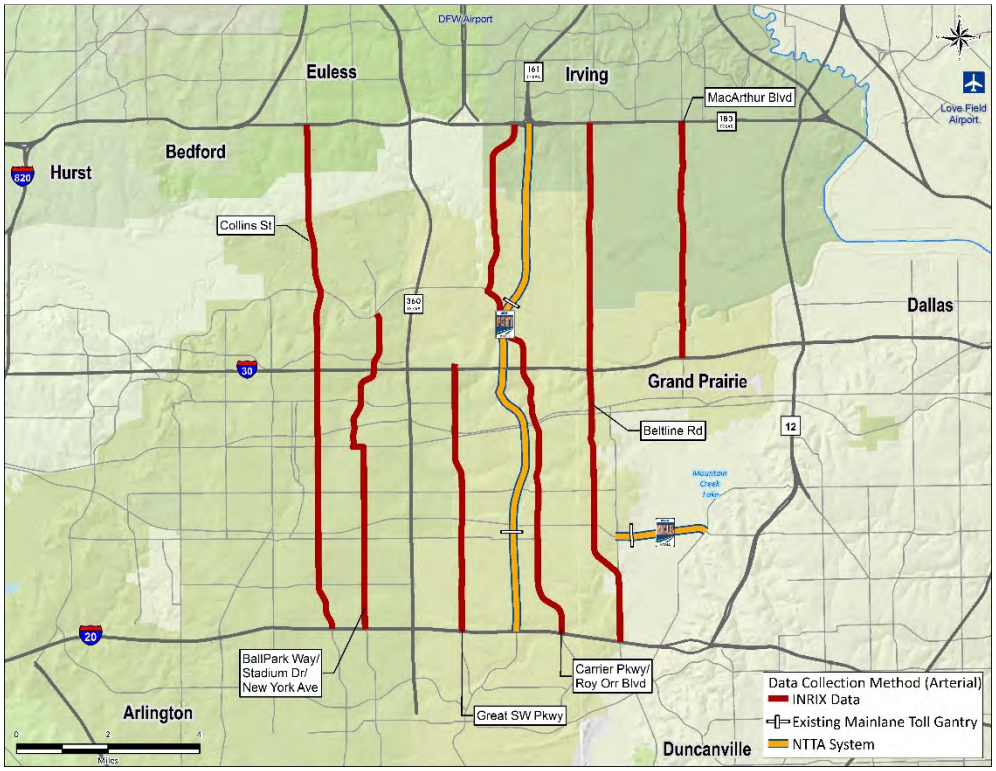


Figure 2-28.
PGBT WE Area Travel Speed Data Collection Locations (Arterials)

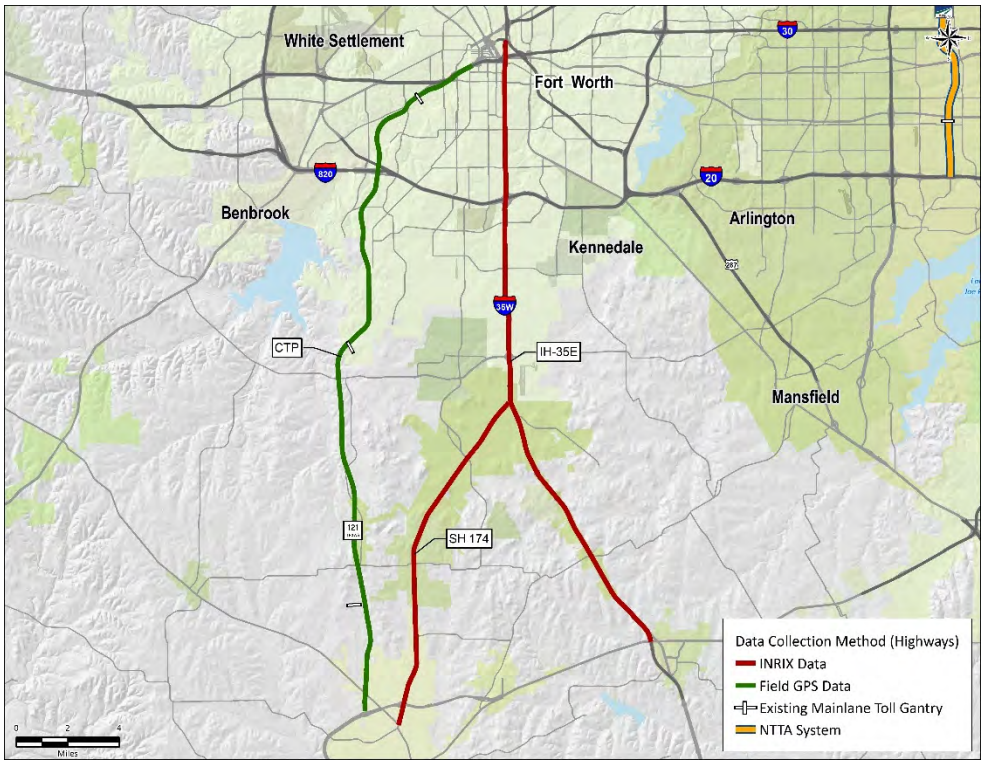


Figure 2-29.
CTP Area Travel Speed Data Collection Locations (Highways)

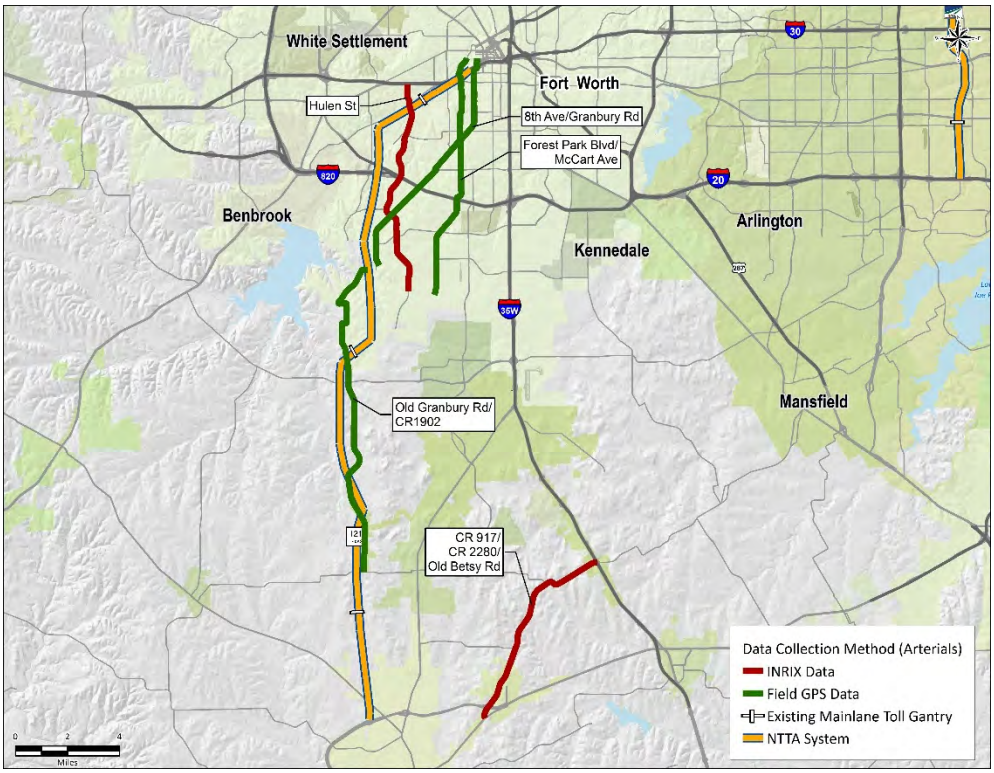


Figure 2-30.
CTP Area Travel Speed Data Collection Locations (Arterials)

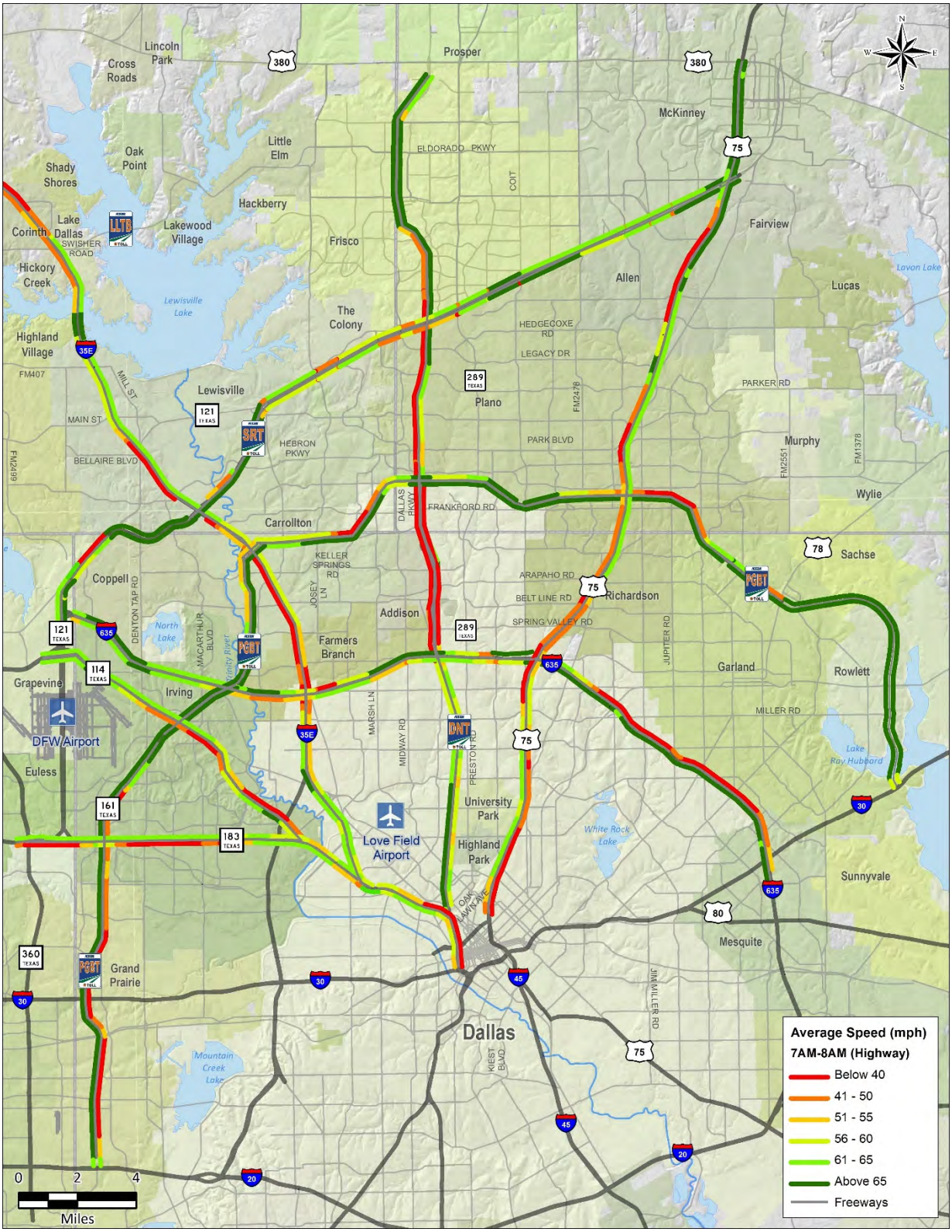


Figure 2-31.
DNT/PGBT/SRT Area Travel Time Results: AM Peak Hour Conditions (Highways)

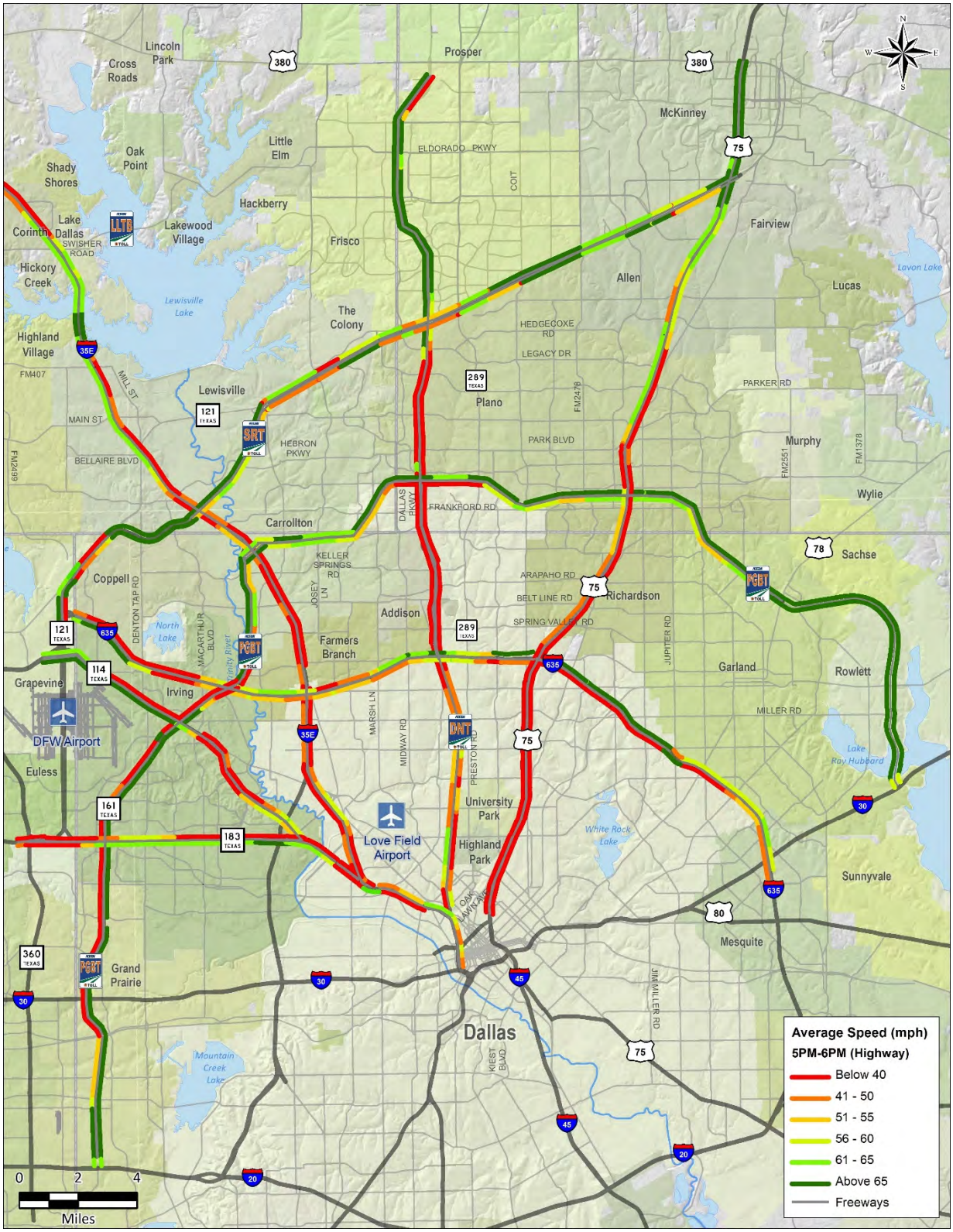


Figure 2-32.
DNT/PGBT/SRT Area Travel Time Results: PM Peak Hour Conditions (Highways)

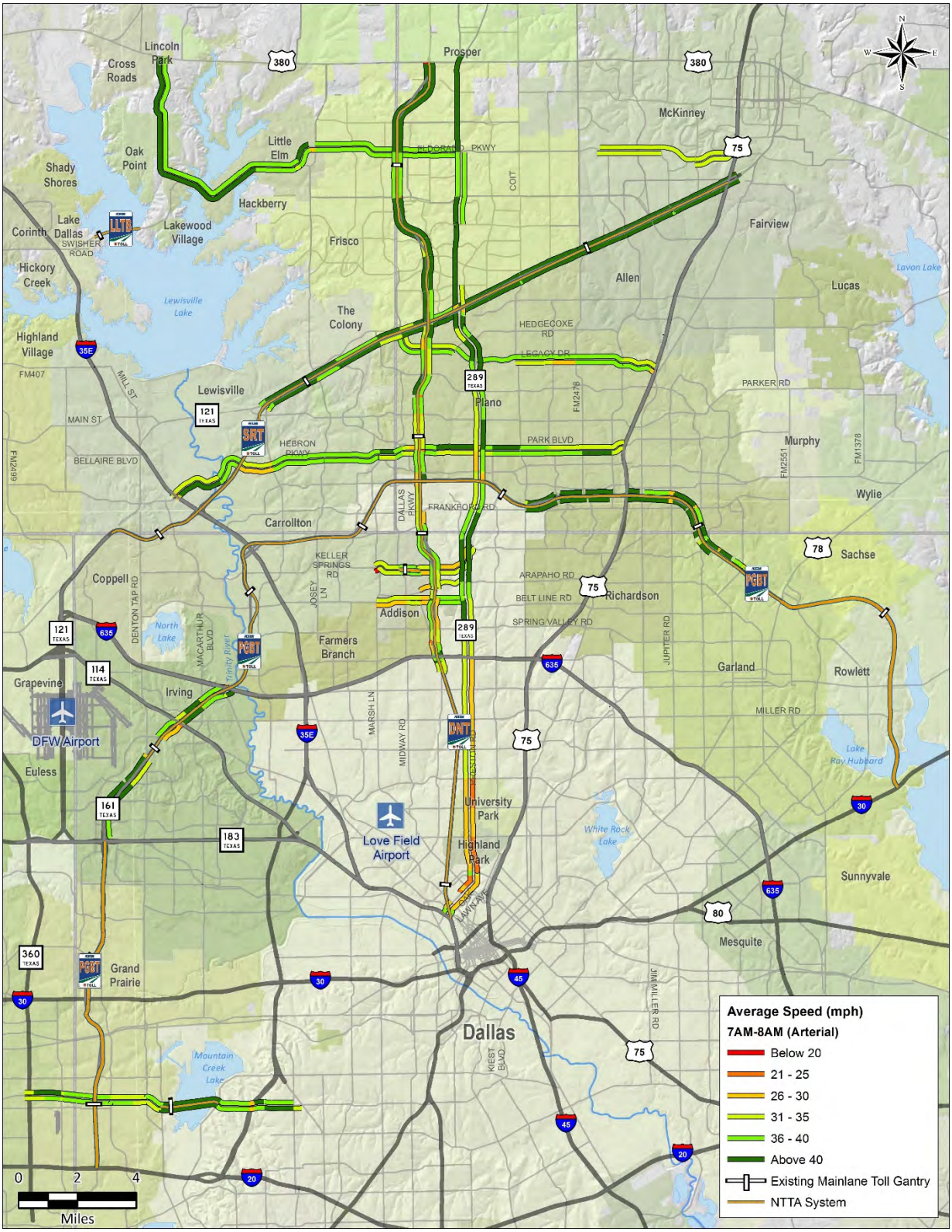


Figure 2-33.
DNT/PGBT/SRT Area Travel Time Results: AM Peak Hour Conditions (Arterials)

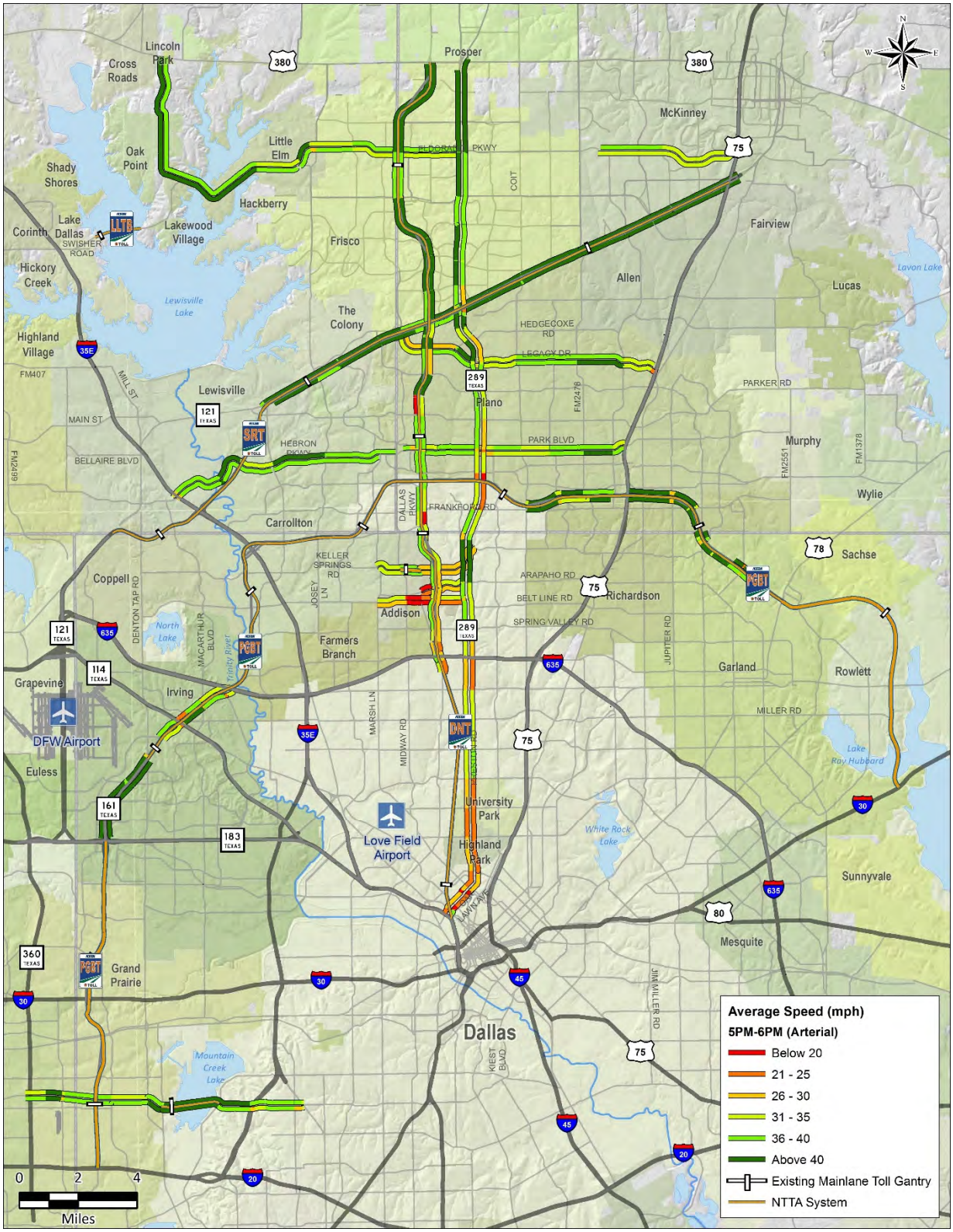


Figure 2-34.
DNT/PGBT/SRT Area Travel Time Results: PM Peak Hour Conditions (Arterials)

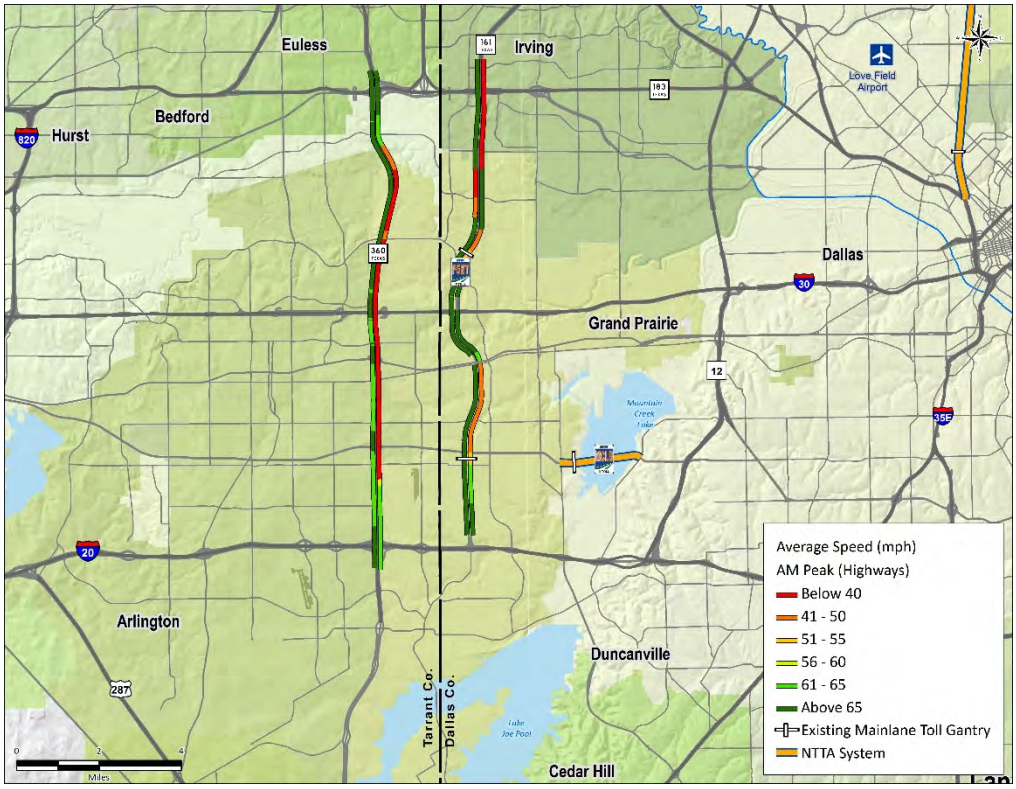


Figure 2-35.
PGBT WE Area Travel Time Results: AM Peak Hour Conditions (Highways)

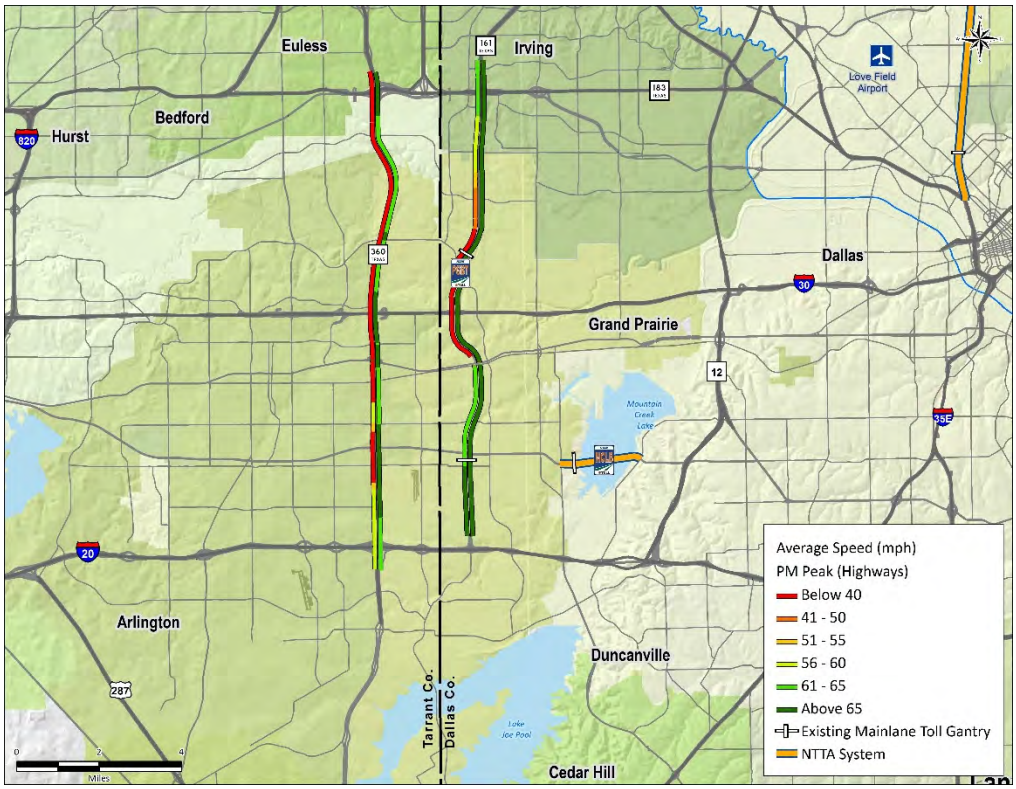


Figure 2-36.
PGBT WE Area Travel Time Results: PM Peak Hour Conditions (Highways)

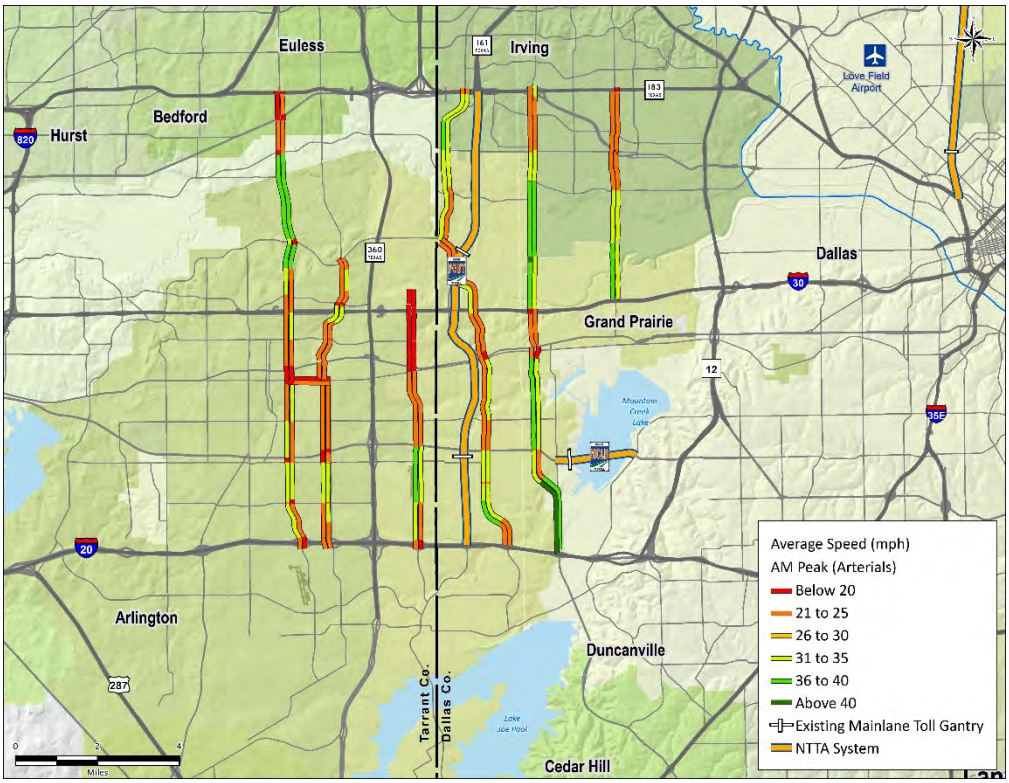


Figure 2-37.
PGBT WE Area Travel Time Results: AM Peak Hour Conditions (Arterials)

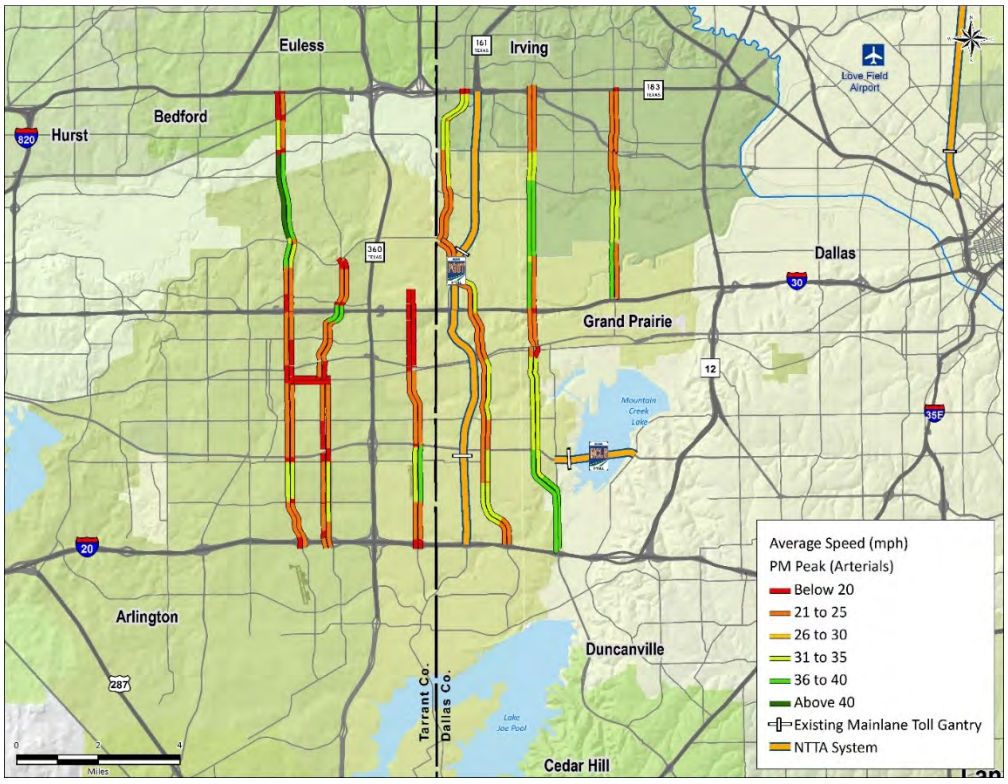


Figure 2-38.
PGBT WE Area Travel Time Results: PM Peak Hour Conditions (Arterials)

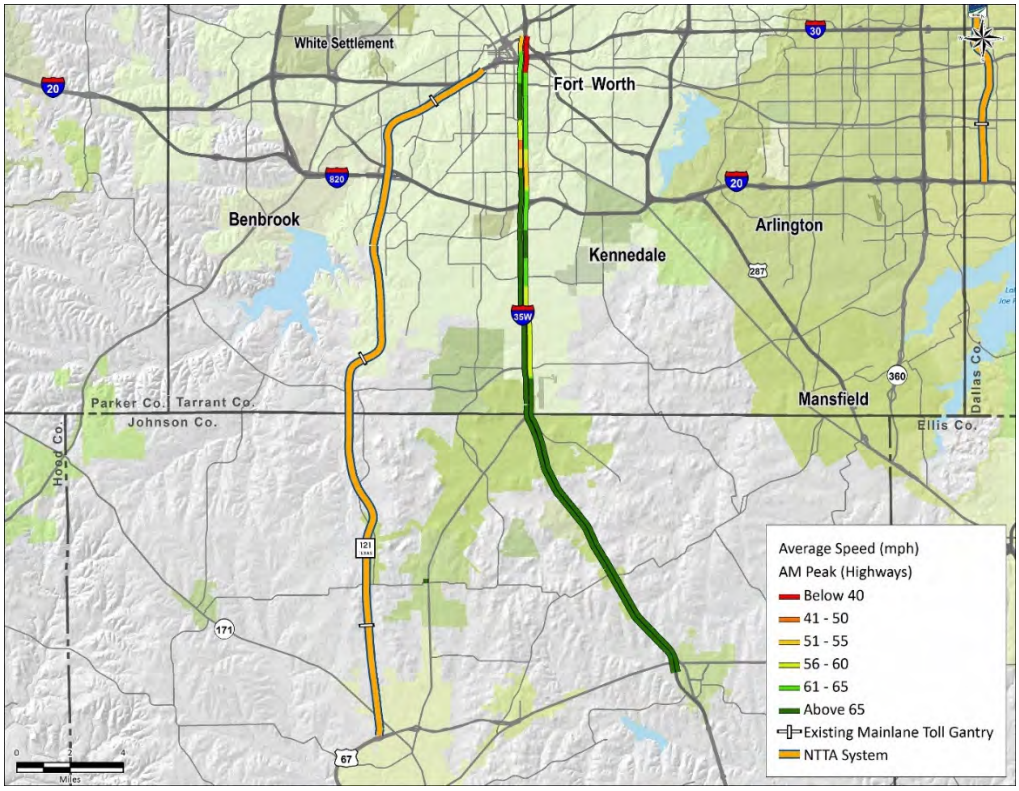


Figure 2-39.
CTP Area Travel Time Results: AM Peak Hour Conditions (Highways)

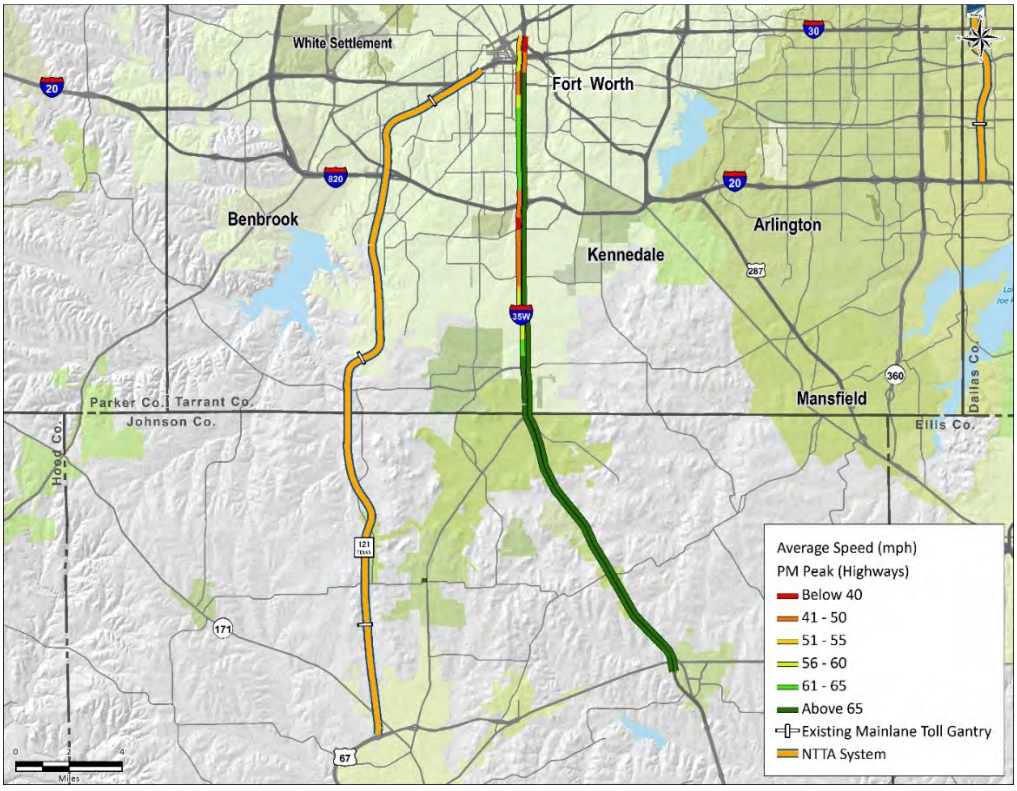


Figure 2-40.
CTP Area Travel Time Results: PM Peak Hour Conditions (Highways)

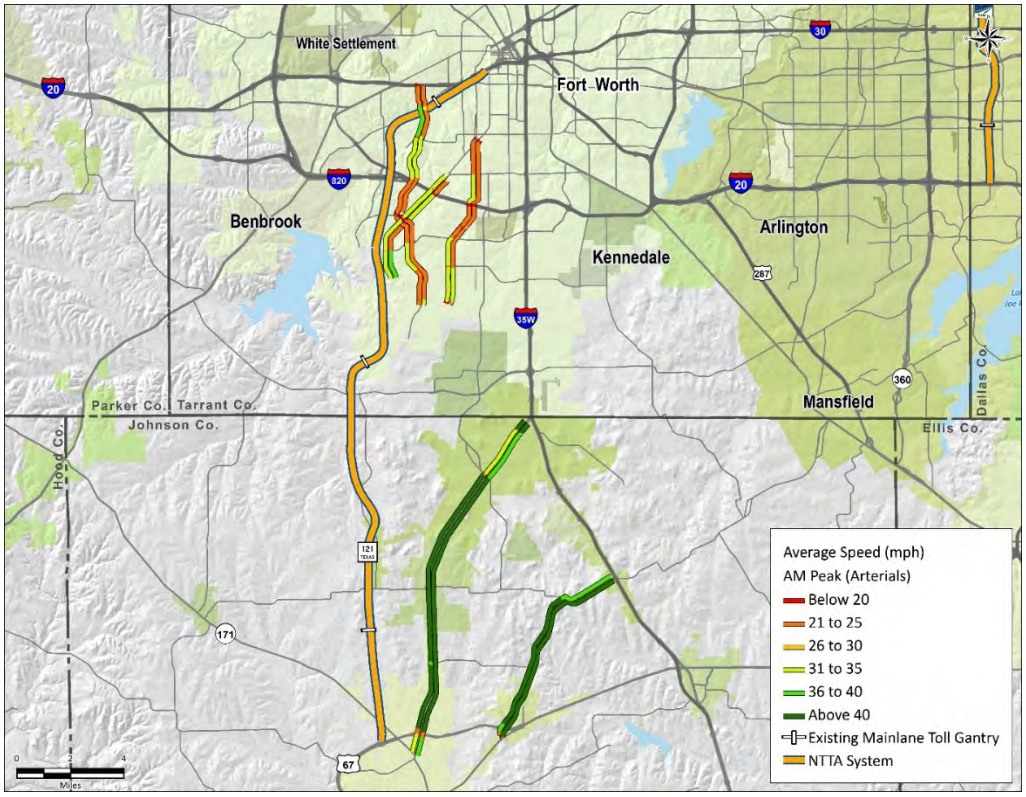


Figure 2-41.
CTP Area Travel Time Results: AM Peak Hour Conditions (Arterials)

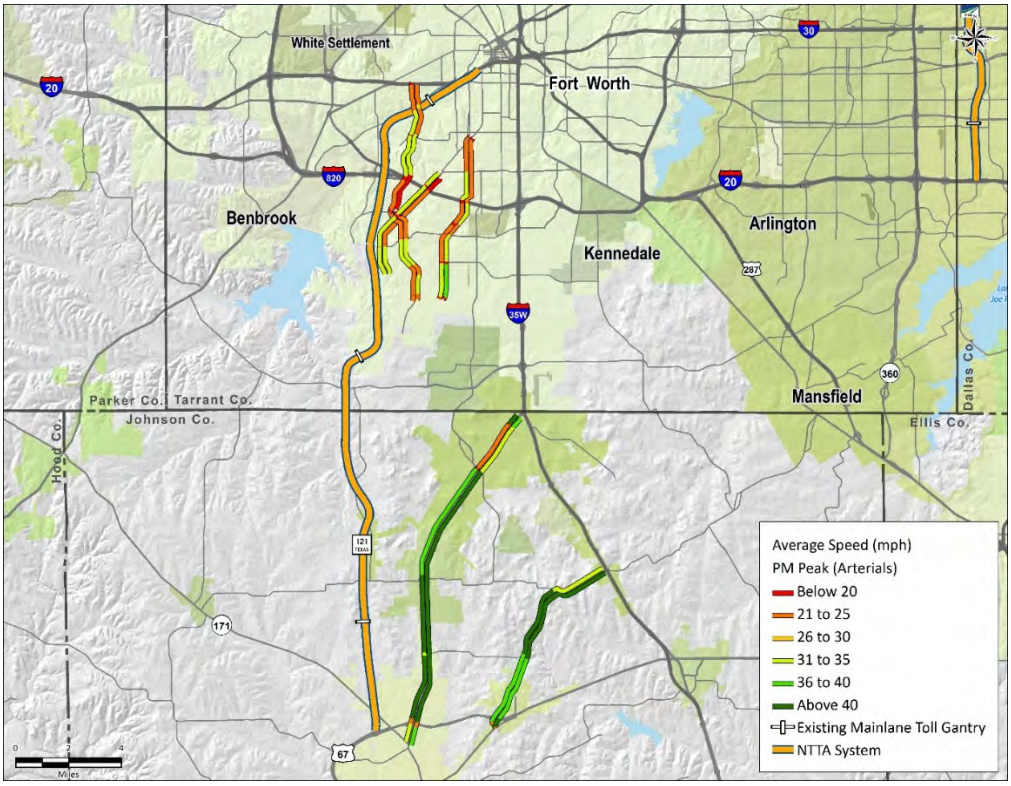


Figure 2-42.
CTP Area Travel Time Results: PM Peak Hour Conditions (Arterials)

STATED PREFERENCE SURVEY

CDM Smith engaged Resource Systems Group (RSG) to conduct NTTA System stated preference (SP) surveys between March and April 2011. These SP surveys focus on travel preferences as they relate to the cost and reasons for selecting or not selecting toll roads. This type of survey is used to determine travelers' willingness to pay to use toll facilities.

A report from RSG that describes the NTTA System travel surveys and includes an analysis of the survey results is included as an appendix in the October 2011 Study. RSG's report describes the questionnaire used for the survey, the survey administration approach, analysis of the survey responses, estimation of the values of time and expected delay. RSG also provided an updated letter with recommendations on how to estimate the revised value of time for 2016. RSG recommended adjusting values of time by a factor of 1.0098 to reflect changes in real income and 1.049 to bring the values up to 2016$, for a total adjustment factor of 1.059.

Included in the RSG report are the following appendices:

- Appendix A contains a detailed description of the survey questionnaire and survey logic
- Appendix B includes screenshots of the online survey
- Appendix C contains a detailed set of comments received from the survey respondents
- Appendix D includes detailed tabulations of the survey results

The data collected through these surveys and the results were crucial inputs to the estimation of traffic and revenue on NTTA System facilities.

RSG also prepared a memorandum in August 2016 (included as Appendix B of this report) indicating that the values of time that were estimated for potential travelers on tolled NTTA facilities should be adjusted to reflect the changes in the CPI from 2011 dollars to 2016 dollars. In addition, income growth has outpaced inflation over this same time period, resulting in a growth in real incomes of about 9.3 percent. The overall recommendation was to adjust the values of time by 1.0098 to reflect changes in real income and 1.049 to bring the values up to 2016 dollars, for a total adjustment factor of 1.059 to adjust values of time for both sets of changes.

Section 3

Dallas-Fort Worth Area Transportation Characteristics

The purpose of this section is to provide a background of the existing and future transportation characteristics surrounding NTTA roadways in the DFW Metropolitan Area (DFWMA). To maintain consistency with regional transportation planning efforts, planned and programmed transportation improvements contained within Mobility 2040, the current Metropolitan Transportation Plan (MTP) for the DFWMA, are assumed as the regional foundation. The MTP is developed by the North Central Texas Council of Governments (NCTCOG) and adopted by the Regional Transportation Council (RTC), the metropolitan planning organization (MPO) policy body for the DFWMA. Information described in this section draws from the current MTP. As the MPO, NCTCOG is primarily responsible for conducting the multimodal long-range regional transportation planning process for the DFWMA.

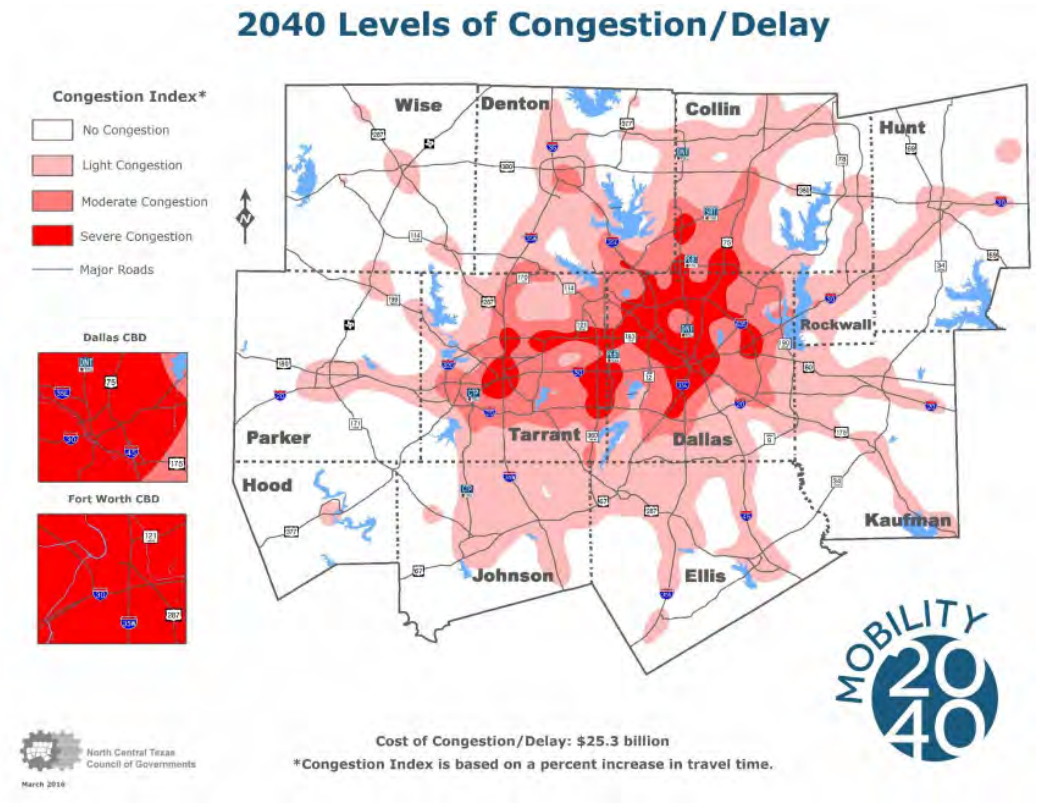
The MTP for the DFWMA serves as a guideline for the region's planned investment in the transportation infrastructure and services over the next twenty-three years. It is a federal requirement that the MTP must be financially constrained and balanced to the region's anticipated revenue streams over a minimum time horizon of twenty years. Mobility 2040 was adopted by the RTC in March 2016, and an air quality conformity determination was received from FHWA in September 2016. The Mobility 2040 plan includes $118.9 billion in major expenditures on recommended transportation improvement projects and programs expected to be implemented between now and the planning horizon year of 2040. The MTP outlines a $43.4 billion investment in North Texas roadway infrastructure expansion, system improvements, and new roadway capacity. Of that amount, $33.6 billion is designated for the construction of controlled access transportation infrastructure such as freeways, tollways and managed lanes, with the remaining $9.8 billion designated for the regional arterial system.

According to US Census, DFWMA is the fourth largest metropolitan area in the nation with population of 7.0 million in 2017 and is projected to grow to 10.7 million persons by 2040. This growth represents a 53 percent increase in the population of North Texas over a 30-year period. Total employment is expected to increase 46 percent from 4.6 million in 2017 to 6.7 million by 2040. The DFWMA has one of the largest regional economies in Texas and is larger in population than thirty-four states. Section 4 provides detailed information regarding the demographic growth characteristics of the region.

TRAFFIC CONGESTION TRENDS

Figure 3-1 provides an estimate of the 2040 congestion levels with both the currently planned transportation infrastructure and under a no-build scenario without any transportation improvements. As seen in Figure 3-1, by 2040 moderate to severe congestion will affect much of the area surrounding NTTA's roadways.

Mobility 2040 reports that the region-wide annual cost of congestion in 2017 will be close to $10.7 billion and could possibly reach $25.3 billion by 2040 with planned infrastructure improvements in place and $43.9 billion with no transportation improvements. In 2017, the region experienced peak period travel times that are more than 38 percent above free flow conditions due to congestion; and it is expected that this will increase to over 58 percent in 2040 even after implementation of all planned improvements.



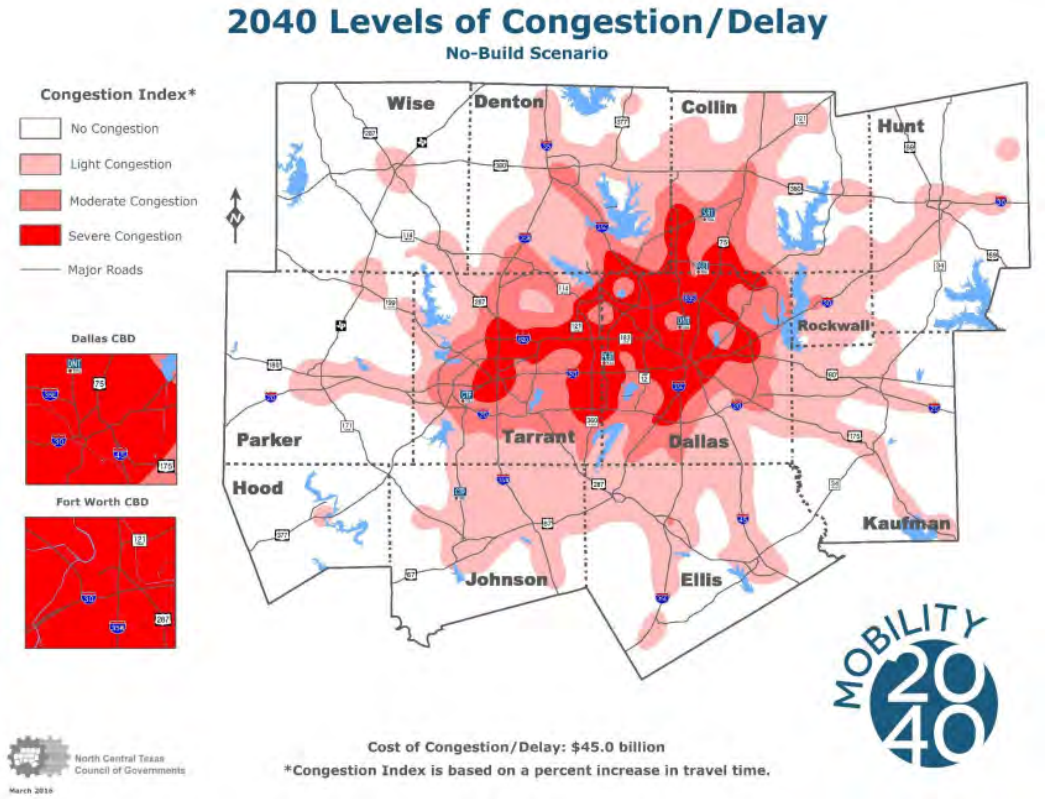


Figure 3-1.
2040 Levels of Congestion/Delay
Source: North Central Texas Council of Governments
Mobility 2040 Metropolitan Transportation Plan

FREEWAY AND TOLLWAY SYSTEM

Figure 3-2 provides an illustration of the funded roadway improvement recommendations included in the Mobility 2040 Plan, focusing on freeways, tollways, HOV/managed lanes, frontage roads and selected regionally significant arterials. The identification of these facilities is very important to this study because additional freeway and arterial improvements could materially impact NTTA System traffic and toll revenue. Facilities providing improved accessibility to NTTA System facilities could provide positive impacts to the NTTA System while competing/alternative routes could dampen its traffic and revenue potential.

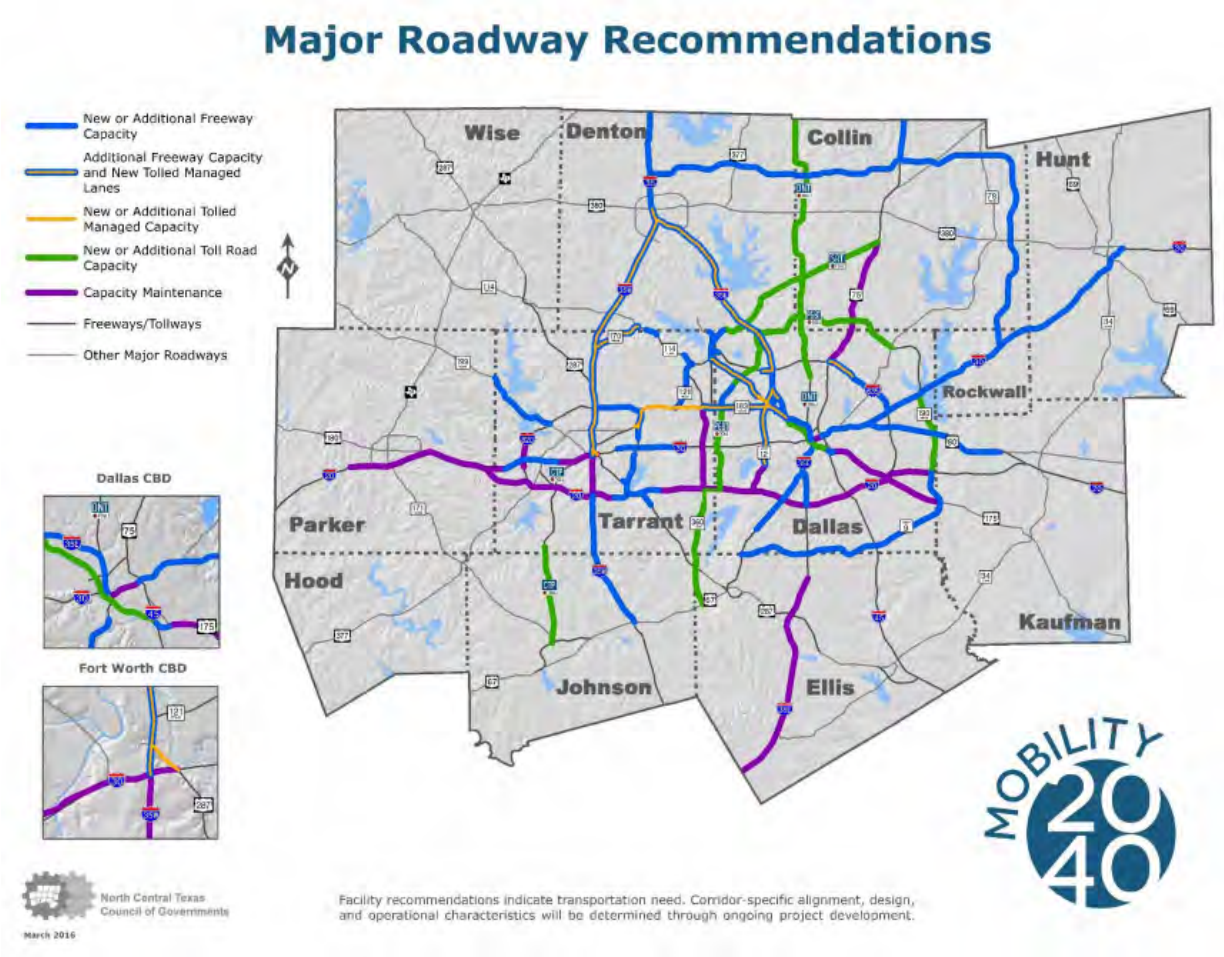


Figure 3-2.
2040 Major Roadway Recommendations
Source: North Central Texas Council of Governments
Mobility 2040 Metropolitan Transportation Plan

Additional toll roads planned for the region during the next twenty-three years include:

- SH 190 East Branch, from IH 30 to IH 20
- Trinity Parkway, from IH 35E to SH 310
- SH 360, from Green Oaks to US 287 (expected to open April 2018)
- SH 360 from US 287 to US 67

- SH 360/PGBT WE toll connector
- Dallas North Tollway Northern Extension, from US 380 to Grayson County

Additionally, the following managed lanes and associated capacity expansions are planned during the next twenty-three years in the region as shown in Figure 3-3:

- **IH 35E** – IH 35E Ultimate configuration from the IH 35E/IH 35W interchange in Denton to IH 635 in Dallas will be completed by 2027. This improvement includes expansion of general purpose lanes and managed toll lanes including conversion from current reversible managed toll lanes to concurrent managed toll lanes.
- **US 75** – The US 75 project in southern Collin County involves the reconstruction of US 75 to add general purpose freeway lanes in the section between the SRT and PGBT. This project also includes conversion of the existing HOV lanes to general purpose lanes between Spring Creek Parkway and IH 635. This project also includes interchange improvements between US 75 and PGBT aimed at alleviating significant congestion due to bottleneck conditions. These improvements will increase the connectivity from PGBT to US 75 and from US 75 to PGBT. This project is estimated to be complete by early 2019.
- **North Tarrant Express** – Segment 1 will expand general purpose lanes from four lanes to six lanes by 2027. Segment 2W will expand four managed toll lanes to six managed toll lanes by 2027. Segment 3A along IH 35W between IH 820 and IH 30 will construct new managed toll lanes by 2027 and general purpose lanes expansion by 2037. Segment 3B will expand general purpose lanes between US 81/US 287 and IH 820 by 2037. Segment 3C along IH 35W between Eagle Parkway and US 81/US 287 will include construction of the concurrent managed toll lanes and expansion of general purpose lanes by 2027.
- **IH 35W –** IH 35W South will be widened with additional general purpose lanes between IH 30 and US 67 by 2037.
- **SH 360** – SH 360 between IH 30 and IH 20 will be widened from six lanes to eight general purpose lanes by 2027.
- **Midtown Express –** The SH 183 from SH 121 to IH 35E will add two concurrent managed toll lanes by 2018. The SH 183 ultimate configuration will include additional general purpose lanes and managed lanes expansion by 2040. State Loop 12 between IH 35E and SH 183 will add two managed lanes by 2018 and the ultimate configuration will include widening of general purpose lanes and two reversible managed lanes between SH 183 and Spur 408 by 2040. SH 114 at the ultimate configuration will add general purpose lanes and concurrent managed lanes between SH 183 and SH 121.

For areas in close proximity to the NTTA System roadways, Mobility 2040 includes several changes to planned projects from what was included in prior MTPs. As shown in Figure 3-3, projects on Loop 12, IH 635 and SH 114 that were deferred in the original Mobility 2035 plan have been reestablished in Mobility 2040. Additionally, multiple projects, including SH 161, received modifications to their scope. Figure 3-4 illustrates the planned completion dates of projects in the NTTA System area that have been included in Mobility 2040. Ensuring consistency with NTTA's capital plan, additional input from the NTTA staff was utilized to modify the assumptions regarding the scope and opening dates of some of the NTTA facility expansions that are shown in Figure 3-4.

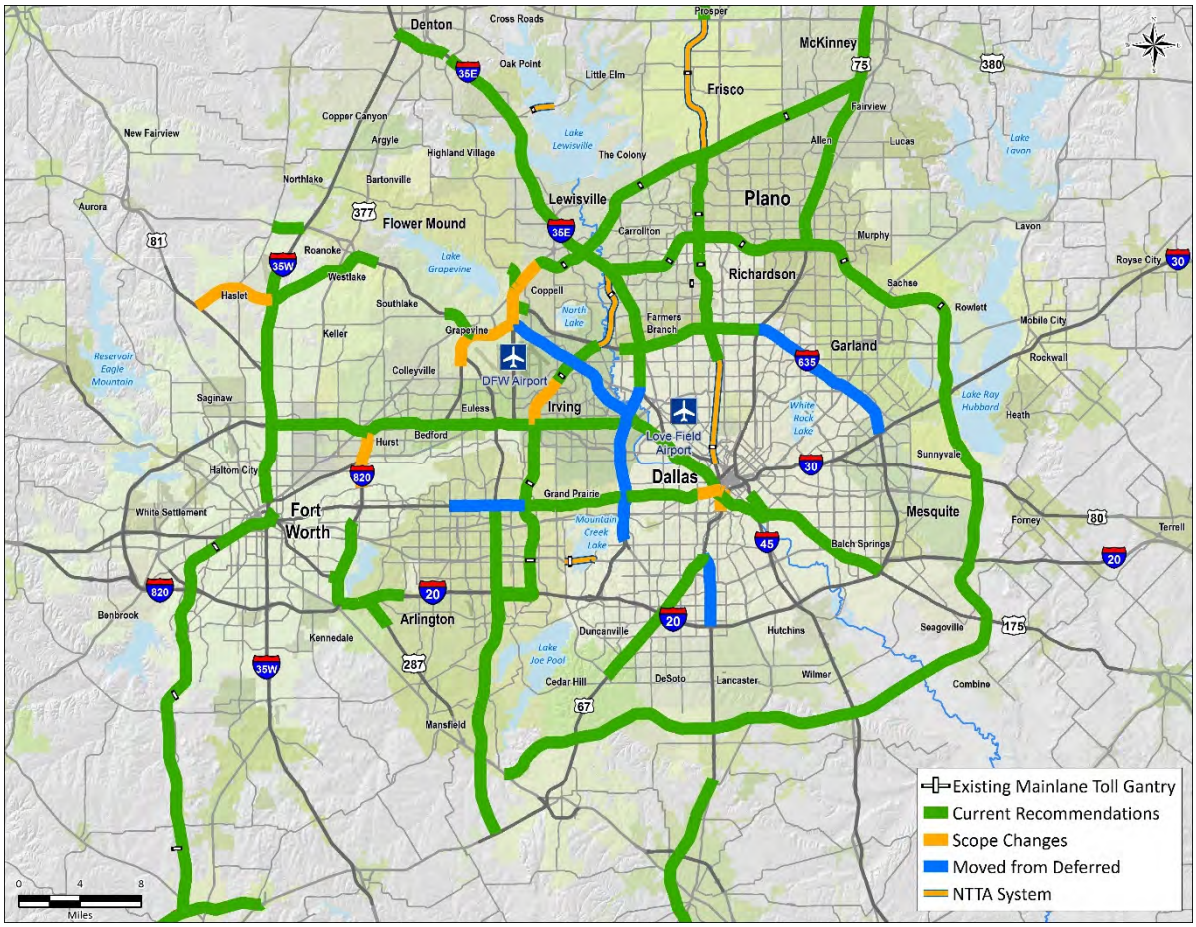


Figure 3-3.
Planned Roadway Projects in the NTTA System Area
Source: North Central Texas Council of Governments
Mobility 2040 Metropolitan Transportation Plan

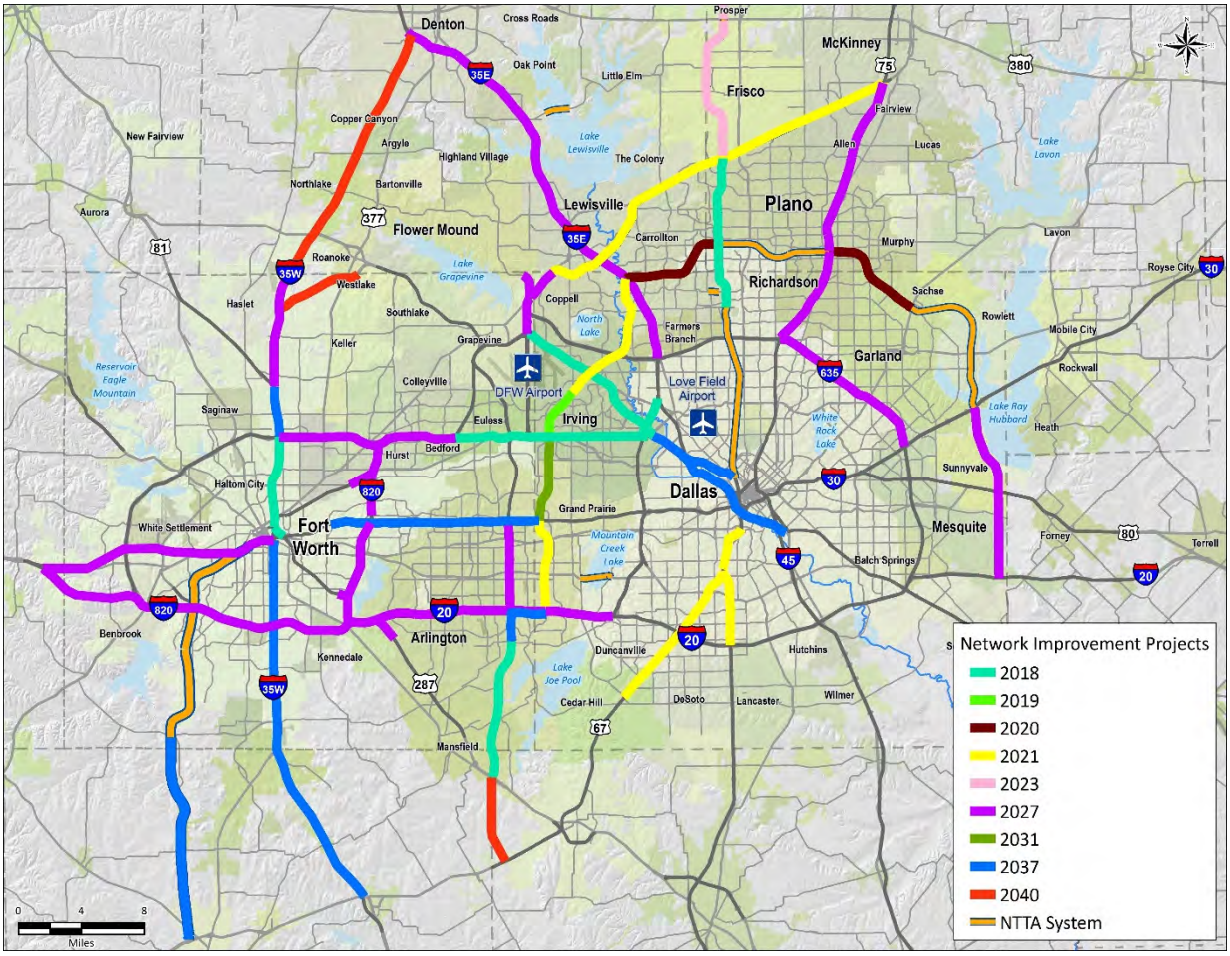


Figure 3-4.
Expected Completion Years of Planned Projects in the NTTA System Area
Source: North Central Texas Council of Governments (Mobility 2040 Metropolitan Transportation Plan) and North Texas Tollway Authority

RAIL TRANSIT SYSTEM

Transit service in the DFWMA is provided primarily by Dallas Area Rapid Transit (DART), the Fort Worth Transportation Authority (The T) and the Denton County Transportation Authority (DCTA). The existing DART light-rail system consists of four lines: The Red, Blue, Green and Orange lines. The Red Line begins in South Dallas near Westmoreland Avenue and ends at the Parker Road station in Plano; the Blue Line extends from Ledbetter Drive in South Dallas to Downtown Garland; and the Green Line runs from southeast Dallas to north Carrollton. Additionally, for selected weekday trips the Orange Line runs parallel to the Red Line and a portion of the Green Line. A map of the current DART rail system is shown in Figure 3-5.

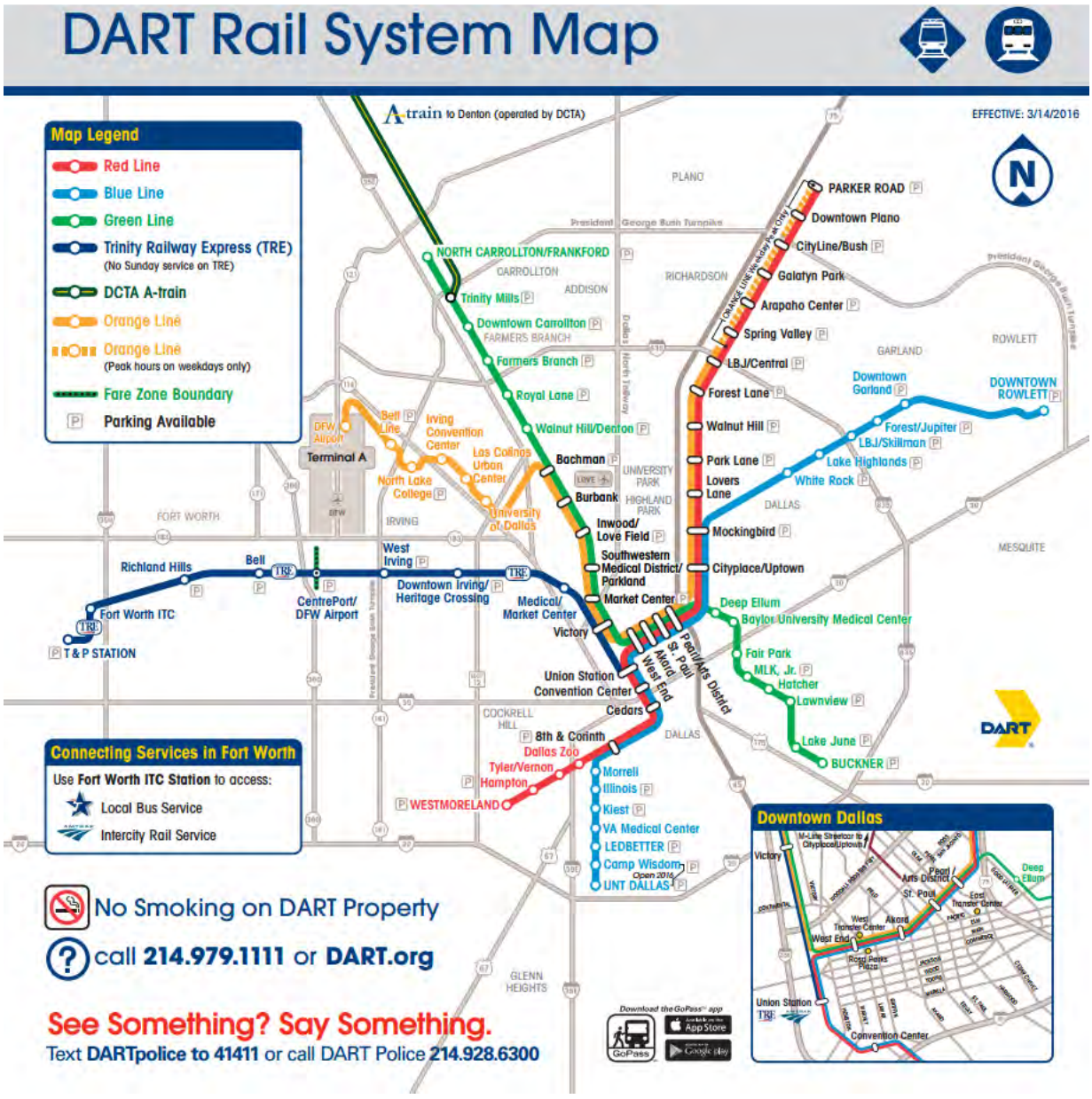


Figure 3-5.
Current DART Rail System
Source: Dallas Area Rapid Transit (http://www.dart.org)

The Fort Worth Transportation Authority is the operator of the bus system of the city of Fort Worth, popularly known as The T. The T also partners with DART on the Trinity Railway Express (TRE), which offers commuter rail service between downtown Fort Worth and downtown Dallas with "rubber tire" connections to DFW Airport.

The Denton County Transportation Authority (DCTA) is the transit authority that operates in Denton County, which is located northwest of Dallas County. Along with operating bus service in three cities within Denton County, DCTA runs the A-Train commuter rail, a regional rail line parallel to IH 35E that connects with the DART system at the Trinity Mills Station in Carrollton.

Figure 3-6 illustrates the proposed rail system as developed by NCTCOG in cooperation with the transit agencies. As can be observed in Figure 3-6, there are proposed transit alignments included in Mobility 2040 which could potentially compete directly with NTTA System facilities.

The transportation system defined in the Mobility 2040 and described above is reflected in the trip tables used to estimate the traffic and toll revenue for the NTTA System. The trip tables and networks were obtained from NCTCOG to reflect all the planned transportation infrastructure development included in Mobility 2040.

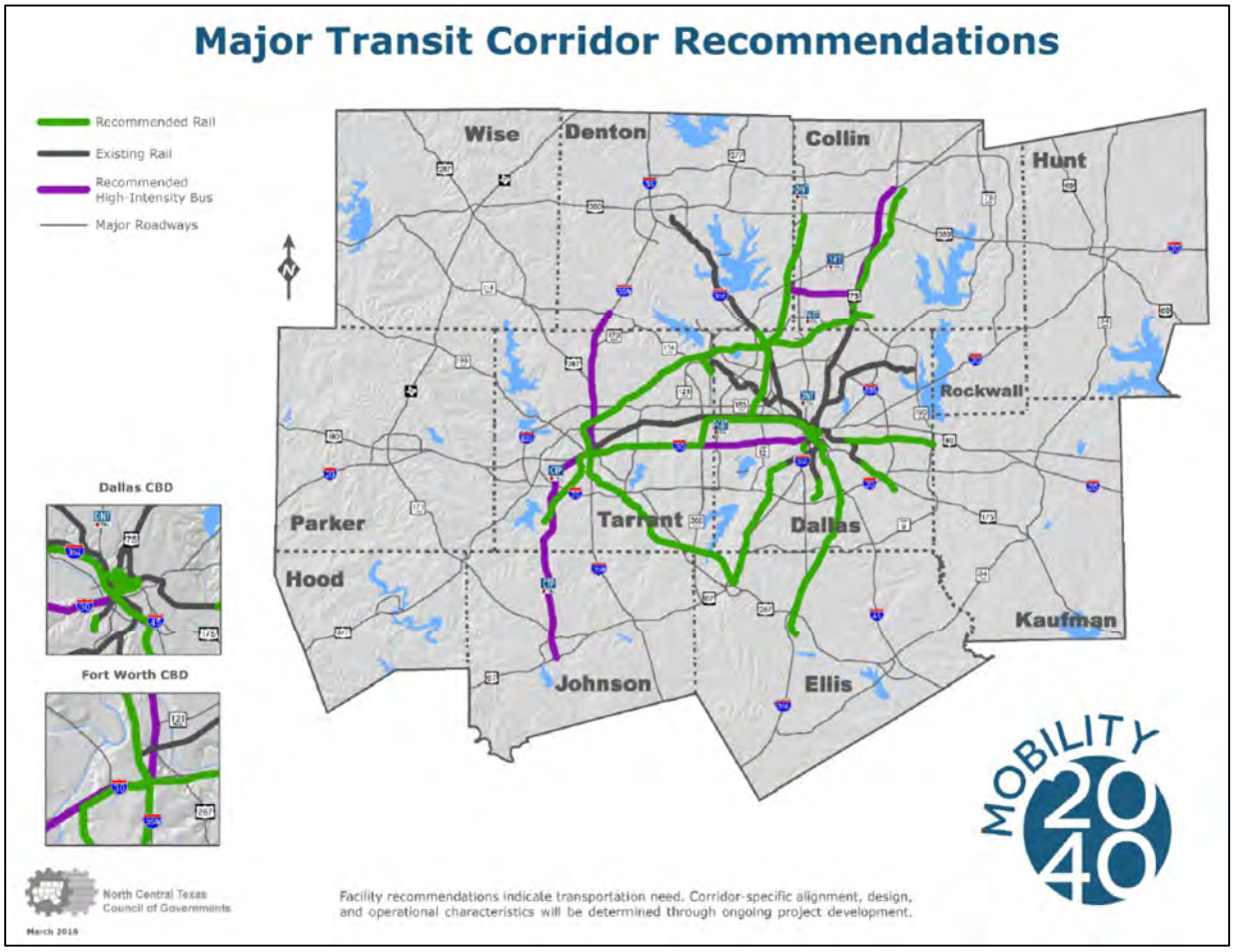


Figure 3-6.
2040 Project Implementation: Passenger Rail
Source: North Central Texas Council of Governments
Mobility 2040 Metropolitan Transportation Plan

Section 4

Regional Demographic and Economic Trends

As part of this NTTA System Comprehensive Traffic and Toll Revenue Study, historical and projected demographic characteristics used by the North Central Texas Council of Governments (NCTCOG) were reviewed to develop travel demand modeling trip tables. This section describes the major socioeconomic characteristics of the Dallas-Fort Worth Metropolitan Planning Area (DFWMPA), including both regional and specific trends near the NTTA System.

In May 2015, NCTCOG's Executive Board adopted new demographic forecasts for the region. The forecasts were developed for the twelve counties that comprise the DFWMPA: Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant and Wise. In March 2016, the Regional Transportation Council (RTC) adopted Mobility 2040: The Metropolitan Transportation Plan for North Central Texas. The demographic datasets from Mobility 2040 were used as the baseline to generate future trip patterns in the DFWMPA. The traffic and revenue estimates included in this report utilized the databases included in the Mobility 2040 Plan.

This section first provides a description of the NCTCOG forecast process used to generate the base demographics followed by a discussion of the regional historical and future growth in the twelve-county area. This section also discusses the independent economic review, which was conducted by Research and Demographic Solutions (RDS).

The demographic information presented in this section forms the foundation used to develop the potential demand for NTTA System facilities. The demographic information is used by the trip generation model to estimate total trips for the travel demand model.

NCTCOG DEMOGRAPHIC FORECAST PROCESS

As required by federal legislation, NCTCOG periodically develops future demographics based on county and regional control totals created by the Texas State Data Center (TSDC) and other independent consultants. The TSDC is part of the State Data Center System, a national network of 52 centers (all 50 states, Puerto Rico and the Virgin Islands) in charge of disseminating demographic information. The demographics adopted by NCTCOG are considered official demographics to support the metropolitan planning process and travel demand modeling within the DFW region.

The demographic forecast and trip table development process implemented by NCTCOG is divided into six steps as illustrated in Figure 4-1. In the first step, regional control totals of population and employment were developed in five-year increments from a base year (2005) through the forecast horizon year (2040). These regional totals were obtained from the TSDC and were combined with forecasts developed by independent economists at the Perryman Group. The forecasts were developed in a coordinated effort between NCTCOG's Research and Information Services and Transportation departments.

The TSDC population forecast process is a cohort-component forecast method for which the key element is the rate of migration. Three scenarios with different rates of migration are usually developed. The 0.0 scenario assumes that there is no migration, and population change is only the result

of births and deaths. The 0.5 scenario assumes a migration rate that is fifty percent of the migration seen from 2000-2010. The 1.0 scenario assumes migration equal to that experienced from 2000-2010.

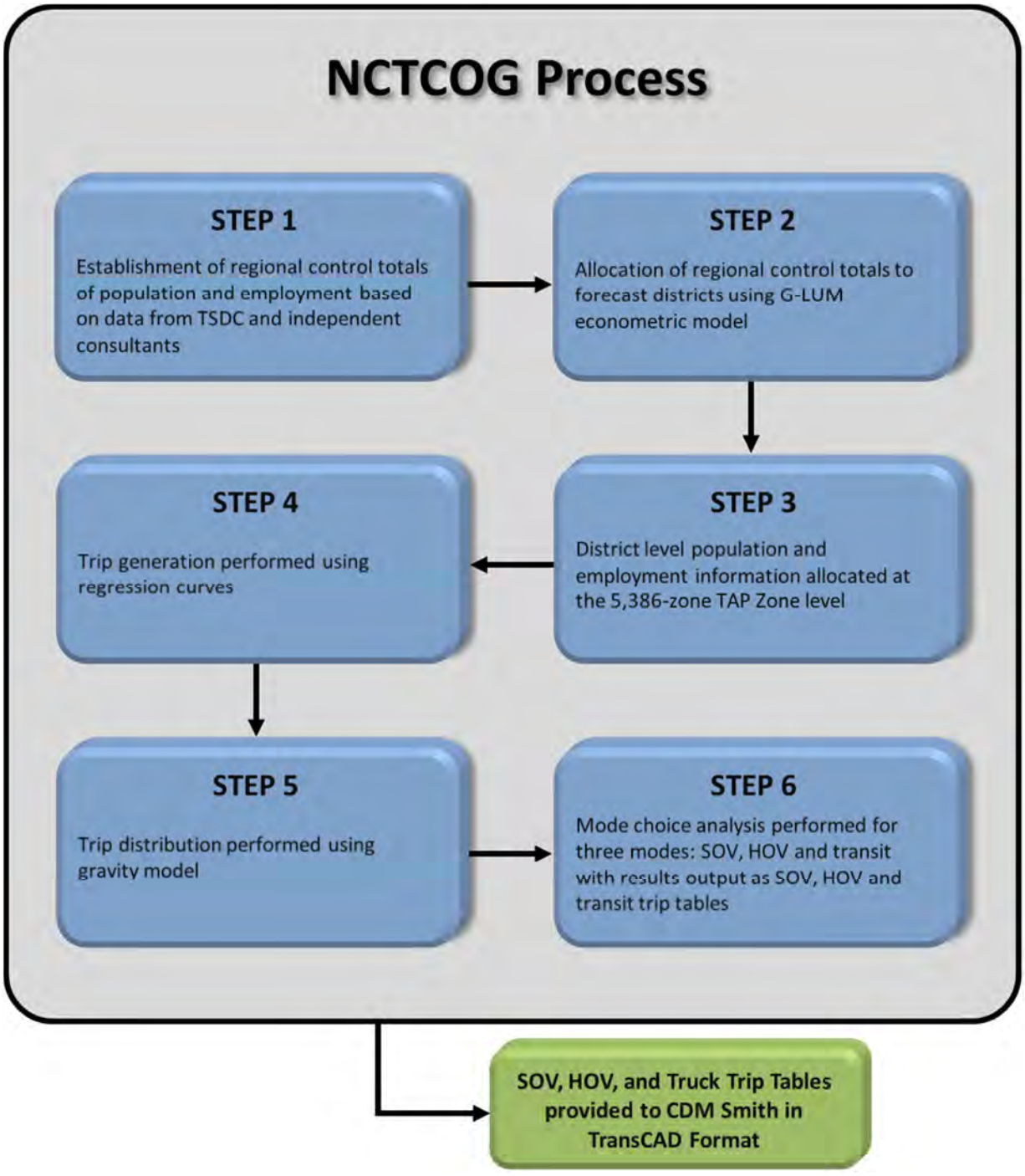


Figure 4-1.
NCTCOG Forecast Process

Table 4-1 shows the control totals that were considered during the forecasting process. The 2040 population forecast ranges from 7.7 million for the zero percent migration scenario, to 12.7 million under the 1.0 percent migration scenario. The population totals adopted by NCTCOG for the region are shown in bold in Table 4-1.

Employment control totals were generated by NCTCOG with input from their Employment Estimates program, which monitors non-construction job counts by place of work for municipalities in the DFWMPA. The employment totals seen in Table 4-1 show that the total employment of the DFWMPA is anticipated to increase from 4.0 million in 2010 to 6.7 million by 2040.

The second step in the forecasting process involves allocating the DFWMPA regional control totals to 242 forecast districts for each five-year interval. The Gravity Land Use Model (G-LUM) was used for this process. In the third step, the district level information was disaggregated to the Transportation Analysis Process (TAP) zone level using a disaggregation model developed by NCTCOG. There are 5,252 TAP zones in the DFWMPA area. The critical variables used in this process are: district level household change, acres of vacant land, density of future residential development, and proximity to transportation infrastructure. Output from this process was closely reviewed by the member cities and approved by the Regional Demographic Task Force before being presented and approved by the NCTCOG Executive Board.

The fourth step involves performing trip generation by using regression curves. This process estimates the total number of trips generated by and attracted to each Traffic Survey Zone (TSZ). In the fifth step, trip distribution is performed using the gravity model. In the sixth and final step, mode choice analysis is performed and trip tables are created for the single occupant vehicle (SOV), high occupancy vehicle (HOV), truck and transit modes. These final official tables were provided to CDM Smith by NCTCOG.

Table 4-1.Population and Employment Forecast Totals

	2010	2017	2027	2037	2040
TSDC Population Scenario 0.0	6,417,724	6,803,324	7,254,163	7,587,739	7,655,576
TSDC Population Scenario 0.5	6,417,724	7,094,157	8,138,505	9,280,991	9,631,420
TSDC Population Scenario 1.0	6,417,724	7,414,412	9,273,161	11,806,005	12,713,894
Mobility 2040 Population Forecast	**6,335,881****	**7,269,121**	**8,597,157**	**10,230,890**	**10,721,069**
Mobility 2040 Employment Forecast	**4,020,484****	**4,599,263**	**5,368,670**	**6,401,374**	**6,711,220**

** Estimated from 2005 and 2017 NCTCOG estimated value
Source: North Central Texas Council of Governments, Texas State Data Center, 2014 Population Projections

HISTORICAL AND FUTURE REGIONAL GROWTH

The sixteen counties served by NCTCOG include Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant and Wise. Figure 4-2 illustrates the spatial relationship of these counties and highlights the twelve counties which cover the DFWMPA travel demand model area. The analysis of historical and future demographic growth from a regional perspective is based on information pertaining to population, employment, and income for these twelve counties.

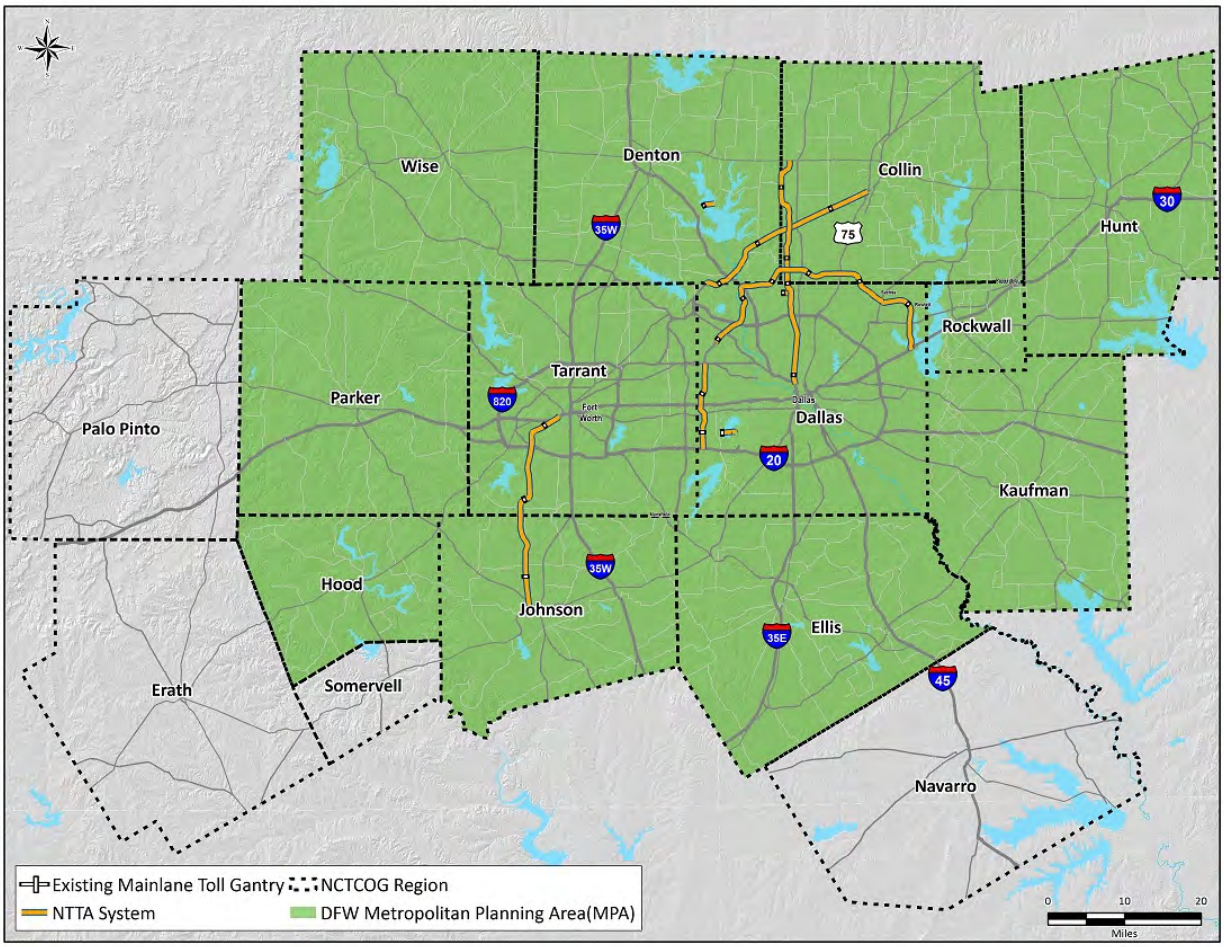


Figure 4-2.
DFW Metropolitan Planning Area

Historical Regional Population Trends

Table 4-2 shows the historical population trends for Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant and Wise Counties, Texas and the United States. The total population in the twelve-county area that comprises the DFWMPA has increased at an average annual rate of 2.5 percent from 1980 to 2010, resulting in 3.4 million additional residents. This regional population growth trend exceeded the state and national growth trends between 1980 and 2010 which were 1.9 percent and 1.0 percent per year, respectively.

Dallas County is the largest county in the region in terms of population with approximately 2.4 million people in 2010. Its population increased at an average annual rate of 1.4 percent between 1980 and 2010, adding a total of 811,720 people during the same period. Dallas County's population in 2010 represented approximately 36.9 percent of the total population of the twelve-county area.

Collin County and Rockwall County were the fastest growing counties in the area between 1980 and 2010. The Collin County population increased from 144,576 in 1980 to 782,341 in 2010, corresponding to an average annual growth rate of 5.8 percent over the thirty-year period. The Collin County population growth rate from 1980 to 2010 has been significantly higher than the population increase experienced by the state of Texas and the United States, respectively.

The population in Denton County increased from 143,126 in 1980 to 662,614 in 2010, corresponding to an average annual growth rate of 5.2 percent. Its growth rate was 2.7 and 5.2 times the growth rate experienced by the state and the nation, respectively, during that period. Tarrant County is the second largest county in the region in terms of population with approximately 1.8 million people in 2010. Its population increased at an average annual rate of 2.5 percent between 1980 and 2010, adding a total of 948,154 people during the same period. Rockwall County experienced a significant growth rate of 5.8 percent between 1980 and 2010, gaining 63,809 residents.

The majority of the population in the DFWMA is concentrated within the four core NTTA member counties (Collin, Dallas, Denton and Tarrant). In 2010, Collin, Dallas, Denton and Tarrant Counties contained over 87 percent of the total population of the twelve-county area, as shown in Table 4-2.

An increase in migration to the state beginning in the 1990s has helped to boost the Texas economy. Since 2006, the state has led the nation in domestic migration from states such as California and New York. According to the U.S Census Bureau, one in six people living in Texas is an immigrant. Approximately 18 percent of DFW population is foreign born. The population of the DFW region grew more than any other metropolitan area in the country between July 2013 and July 2014 according to the U.S Census Bureau. The DFW region added 127,137 people during that period.

Future Regional Population Growth

Also included in Table 4-2 is NCTCOG's population forecast from the Mobility 2040. Population in the twelve-county area is expected to increase from 6.4 million in 2010 to approximately 10.7 million by 2040, corresponding to an average annual growth rate of 1.7 percent. This annual growth rate for the twelve-county area is anticipated to be higher than the annual growth rate for both the state and the nation, which are expected to be 1.4 percent and 0.7 percent, respectively.

Dallas County's population is expected to grow by an average annual rate of 1.2 percent between 2010 and 2040, from 2.4 million in 2010 to 3.3 million by 2040. The additional 1.0 million residents expected in Dallas County by 2040 would represent the second highest number of additional residents for any county in the twelve-county area during that period. Only Tarrant County is expected to add more residents by 2040.

Collin County population is expected to grow between 2010 and 2040 at an average annual rate of 2.3 percent, from about 782,341 in 2010 to 1.6 million by 2040. Rockwall County population is expected to grow between 2010 and 2040 at an average annual rate of 2.5 percent, from 78,337 in 2010 to 166,357 by 2040.

The year 2040 population distributions for each of the counties in the twelve-county area are also presented in Table 4-2. As in 2010, Dallas and Tarrant Counties would continue to comprise the largest population centers in the twelve-county area. Most of the growth is expected to be in the core counties of Dallas, Tarrant, Collin and Denton.

Table 4-2.Countywide Population Trends and Projections

County	US Census Bureau				NCTCOG Demographic Forecast
	Year 1980	Year 1990	Year 2000	Year 2010	Year 2040
Collin	144,576	264,036	491,675	782,341	1,560,421
Dallas	1,556,419	1,852,810	2,218,899	2,368,139	3,357,469
Denton	143,126	273,525	432,976	662,614	1,241,681
Ellis	59,743	85,167	111,360	149,610	283,898
Hood	17,714	28,981	41,100	51,182	81,578
Hunt	55,248	64,343	76,596	86,129	131,022
Johnson	67,649	97,165	126,811	150,934	252,521
Kaufman	39,015	52,220	71,313	103,350	210,097
Parker	44,609	64,785	88,495	116,927	195,286
Rockwall	14,528	25,604	43,080	78,337	166,357
Tarrant	860,880	1,170,103	1,446,219	1,809,034	3,094,649
Wise	26,575	34,679	48,793	59,127	101,865
Twelve-County Area	3,030,082	4,013,418	5,197,317	6,417,724	10,676,844
State of Texas	14,337,820	16,986,510	20,851,818	25,145,561	37,736,338
United States	227,225,620	248,709,873	281,424,602	308,745,538	380,219,000

County	Annual Growth		Percent Population Distribution By County		Share of New Growth (2010-2040)
	1980-2010	2010-2040	2010	2040	
Collin	5.8%	2.3%	12.2%	14.6%	18.3%
Dallas	1.4%	1.2%	36.9%	31.4%	23.2%
Denton	5.2%	2.1%	10.3%	11.6%	13.6%
Ellis	3.1%	2.2%	2.3%	2.7%	3.2%
Hood	3.6%	1.6%	0.8%	0.8%	0.7%
Hunt	1.5%	1.4%	1.3%	1.2%	1.1%
Johnson	2.7%	1.7%	2.4%	2.4%	2.4%
Kaufman	3.3%	2.4%	1.6%	2.0%	2.5%
Parker	3.3%	1.7%	1.8%	1.8%	1.8%
Rockwall	5.8%	2.5%	1.2%	1.6%	2.1%
Tarrant	2.5%	1.8%	28.2%	29.0%	30.2%
Wise	2.7%	1.8%	0.9%	1.0%	1.0%
Twelve-County Area	2.5%	1.7%	100.0%	100.0%	100.0%
State of Texas	1.9%	1.4%	N/A	N/A	N/A
United States	1.0%	0.7%	N/A	N/A	N/A

Source: NCTCOG, US Census Bureau, Texas State Data Center

Historical Regional Employment Trends

Employment statistics are used as relative indicators of trip attractions to an area. Intense employment growth in an area indicates the potential for an increase in the demand for transportation infrastructure. The countywide historical employment trends in the DFWMPA are shown in Table 4-3. Between 1990 and 2010, employment in the twelve-county area increased at an annual rate of 3.2 percent, which was higher than the employment growth rate of both the state and nation. Dallas County is the most prominent employment center in the twelve-county area and is home to many industrial and medical institutions such as AT&T, Bank of America, Southwest Airlines, Texas Instruments, Baylor University Medical Center and Texas Health Presbyterian Hospital. According to figures presented by NCTCOG, Dallas County added 695,053 new jobs between 1990 and 2010 at an average annual growth rate of 2.6 percent. In 2010, jobs in Dallas County represented 48.5 percent of the total employment in the twelve-county area.

Approximately 342,261 new jobs were added to Collin County between 1990 and 2010 which corresponds to an average annual growth rate of 7.0 percent. Fourteen percent of the total jobs produced in the region from 1990 to 2010 were added to Collin County. Its employment growth rate was the highest in the DFWMA during that period. Denton County experienced strong employment growth between 1990 and 2010; employment grew from 75,817 in 1990 to 244,358 in 2010, corresponding to an additional 168,541 jobs at an average annual growth rate of 5.5 percent. Tarrant County employment increased from 586,058 in 1990 to 1.05 million, equivalent to approximately 465,469 new jobs. During 2010, the total employment in Tarrant County represented 26 percent of the total employment in the DFWMPA.

Employment distributions by county are also shown in Table 4-3. Dallas and Tarrant Counties incorporate the bulk of the employment centers in the DFWMPA, encompassing 74.7 percent of the region's total employment in 2010. Figures 4-3 and 4-4 show historical unemployment and employment growth rates for DFW and the US. As can be seen, the DFW area has been performing better than the rest of the nation in terms of unemployment rates and employment growth since 2008. In July 2017, DFW unemployment rate was 3.7 percent in comparison to the US unemployment rate of 4.6 percent.

Future Regional Employment Growth

Table 4-3 also shows the NCTCOG employment forecast for the year 2010 and 2040. Dallas County will continue to be the major employment center in the region and is expected to add an additional 1.25 million jobs by 2040. Dallas County employment is expected to increase from 1.95 million in 2010 to 3.2 million in 2040 at an annual growth rate of 1.7 percent. Dallas County is expected to house 46.7 percent of the total additional jobs in the twelve-county area.

Collin County's employment is projected to increase from 435,990 in 2010 to 762,919 in 2040 at an average annual growth rate of 1.9 percent. Collin County is expected to gain 12.2 percent of the total regional employment growth. Denton County's employment is projected to increase from 244,358 in 2010 to 445,079 in 2040 at an average annual growth rate of 2.0 percent. Denton County is expected to gain 7.5 percent of the total regional employment growth.

Employment in Tarrant County is expected to reach 1.74 million in 2040, a 0.69 million increase from the 2010 employment of 1.05 million. This represents an average annual growth of 1.7 percent between 2010 and 2040. Tarrant County is expected to account for 25.8 percent of the total additional jobs in the twelve-county area. Between 2010 and 2040, 2.67 million additional jobs are expected to be added

in the twelve-county area, at an annual average growth rate of 1.7 percent. Expected annual growth rates for employment in Texas and nation between 2010 and 2040 are 1.3 and 1.0 percent respectively. Table 4-3 also presents year 2040 employment distributions for the twelve-county area. The major employment concentrations are expected to continue to be located in Dallas and Tarrant Counties. However, the projections anticipate the migration of jobs from the major city centers to the suburban areas throughout the DFWMPA.

Table 4-3.Countywide Employment Trends and Projections

County	Historical Employment			NCTCOG Forecast
	Year 1990	Year 2000	Year 2010	Year 2040
Collin	93,729	204,057	435,990	762,919
Dallas	1,254,974	1,745,109	1,950,027	3,197,471
Denton	75,817	152,818	244,358	445,079
Ellis	27,789	49,071	59,974	96,874
Hood	N/A	N/A	18,632	29,450
Hunt	N/A	N/A	41,766	70,102
Johnson	26,214	45,071	66,046	105,195
Kaufman	17,174	31,027	39,918	64,037
Parker	16,173	29,816	52,095	80,406
Rockwall	7,492	17,025	30,630	53,369
Tarrant	586,058	864,360	1,051,527	1,739,330
Wise	N/A	19,848	29,521	47,227
Twelve-County Area*	2,105,420	3,138,354	4,020,484	6,691,459
State of Texas	9,242,902	12,151,379	14,508,221	21,097,186
United States	138,331,022	165,370,978	174,062,641	233,781,003

County	Annual Growth		Employment Distribution		Percentage of New Employment (2010-2040)
	1990-2010	2010-2040	2010	2040	
Collin	7.0%	1.9%	10.8%	11.4%	12.2%
Dallas	2.6%	1.7%	48.5%	47.8%	46.7%
Denton	5.5%	2.0%	6.1%	6.7%	7.5%
Ellis	3.9%	1.6%	1.5%	1.4%	1.4%
Hood	N/A	1.5%	0.5%	0.4%	0.4%
Hunt	N/A	1.7%	1.0%	1.0%	1.1%
Johnson	4.7%	1.6%	1.6%	1.6%	1.5%
Kaufman	4.3%	1.6%	1.0%	1.0%	0.9%
Parker	5.4%	1.5%	1.3%	1.2%	1.1%
Rockwall	6.0%	1.9%	0.8%	0.8%	0.9%
Tarrant	3.0%	1.7%	26.2%	26.0%	25.8%
Wise	N/A	1.6%	0.7%	0.7%	0.7%
Twelve-County Area*	3.2%	1.7%	100.0%	100.0%	100.0%
State of Texas	2.3%	1.3%	N/A	N/A	N/A
United States	1.2%	1.0%	N/A	N/A	N/A

*for counties where data was available

Source: NCTCOG, U.S. Census Bureau, Texas State Data Center

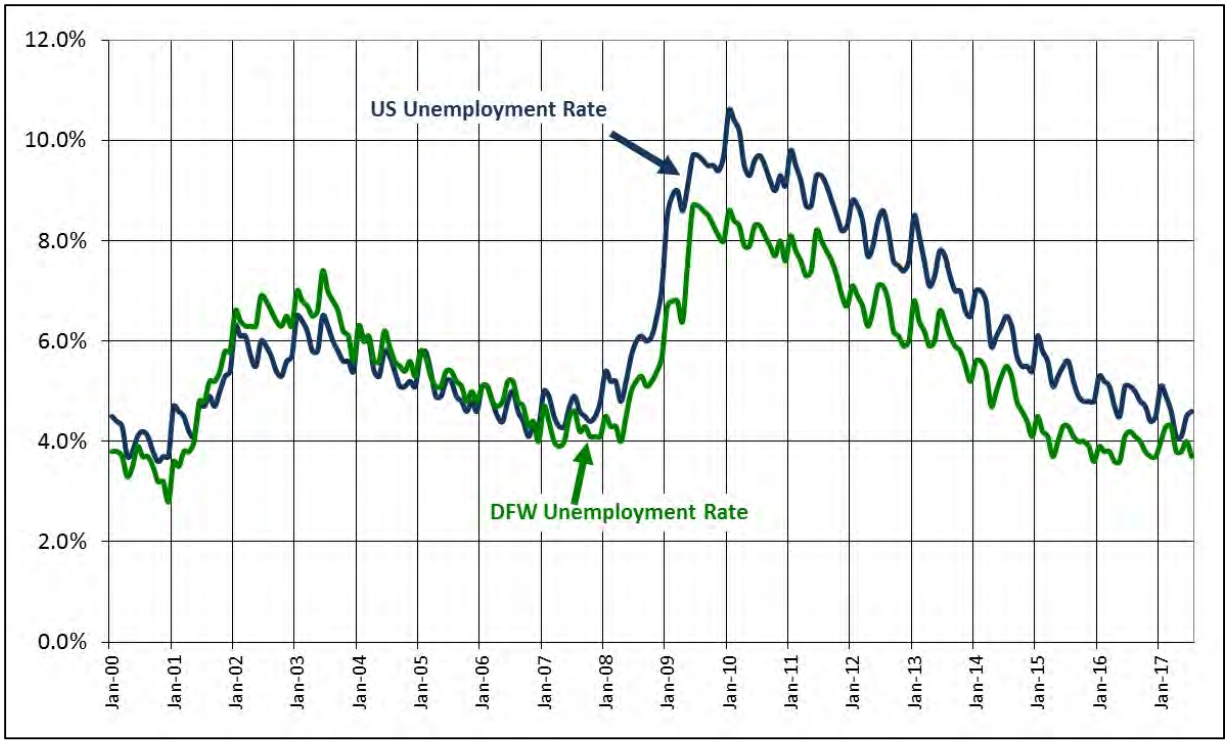


Figure 4-3.
Historical Unemployment Rates
Source: Texas Workforce Commission, August 2017

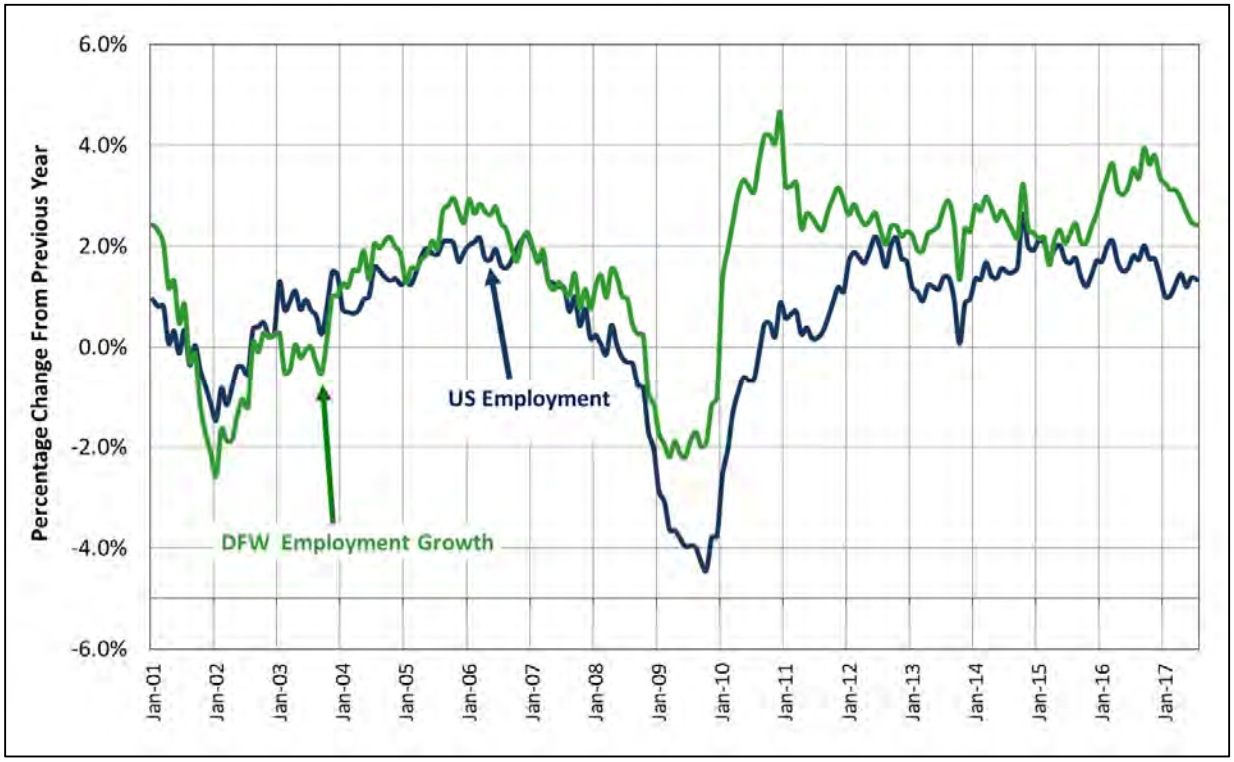


Figure 4-4.
Historical Employment Growth
Source: Texas Workforce Commission, August 2017

Regional Median Household Income Trends

Travel demand, and specifically demand for toll roads, is sensitive to the amount of disposable income available within a household. A reliable indicator of a household's propensity for trip-making, and specifically a motorist's willingness to pay a toll, is median household income. Generally, households with higher incomes have a propensity to make more automobile trips than those with lower incomes due to their greater levels of disposable income. Value of time, a key factor in motorists' willingness to pay tolls, also tends to be higher in households with higher incomes.

A comparison of median household income for the twelve-county area is provided in Table 4-4. The most recent median household income data estimated by the U.S. Census Bureau for 2015 are provided for the twelve-county area, the state, and the nation. The median household income data presented in Table 4-4 indicates that when reported in real 2015 dollars, income in the region, the state and the nation grew moderately between 1989 and 2000, but had declined somewhat by 2015. The 2015 median household income in Dallas County was lower than those of the state and nation. However, several of the surrounding counties have median incomes much higher than the state and nation.

In 2000, median household incomes ranged from 1.98 times that of the state for Collin County to 0.94 times that of the entire state for Hunt County. Similarly, median income within the DFWMPA ranged from 1.84 times the national median household income for Collin County to 0.87 times the national median household income for Hunt County.

Figure 4-5 represents the median household income from the 2014 American Community Survey Five-Year Estimates at the TAP zone level for the NTTA System area presented in constant 2014 dollars. The majority of the zones with the highest median household incomes are located in Collin County and Denton County near the PGBT, SRT and north DNT corridors.

Table 4-4.Median Household Income (in Real 2015 Dollars)

County	Year 1989 [1]	Year 2000 [1]	Year 2010 [2]	Year 2015 [3]	Average Annual Growth Rate			
					(1989-2000)	(1989-2010)	(1989-2015)	(2010-2015)
Collin County	$87,349	$102,085	$86,843	$86,217	1.4%	0.0%	-0.1%	-0.1%
Dallas County	$55,640	$57,511	$51,752	$51,799	0.3%	-0.3%	-0.3%	0.0%
Denton County	$67,995	$81,059	$76,183	$75,649	1.6%	0.5%	0.4%	-0.1%
Ellis County	$51,496	$66,441	$65,670	$68,095	2.3%	1.2%	1.1%	0.7%
Hood County	$57,196	$59,125	$59,203	$46,048	0.3%	0.2%	-0.8%	-4.9%
Hunt County	$44,288	$48,461	$46,495	$58,758	0.8%	0.2%	1.1%	4.8%
Johnson County	$53,683	$58,597	$59,281	$58,141	0.8%	0.5%	0.3%	-0.4%
Kaufman County	$45,779	$58,226	$63,166	$67,012	2.2%	1.5%	1.5%	1.2%
Parker County	$55,203	$61,589	$66,170	$90,940	1.0%	0.9%	1.9%	6.6%
Rockwall County	$74,543	$88,420	$84,176	$60,737	1.6%	0.6%	-0.8%	-6.3%
Tarrant County	$58,692	$64,013	$59,661	$44,052	0.8%	0.1%	-1.1%	-5.9%
Wise County	$48,604	$57,061	$59,554	$56,939	1.5%	1.0%	0.6%	-0.9%
State of Texas	$47,566	$51,622	$52,443	$55,653	0.7%	0.5%	0.6%	1.2%
United States	$52,611	$55,451	$53,987	$55,775	0.5%	0.1%	0.2%	0.7%

Adjusted to 2015 dollars using the Consumer Price Index (CPI).
[1] U.S. Census Bureau, Small Area Income and Poverty Estimates
[2] U.S. Census Bureau, 2006-2010 American Community Survey
[3] U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates

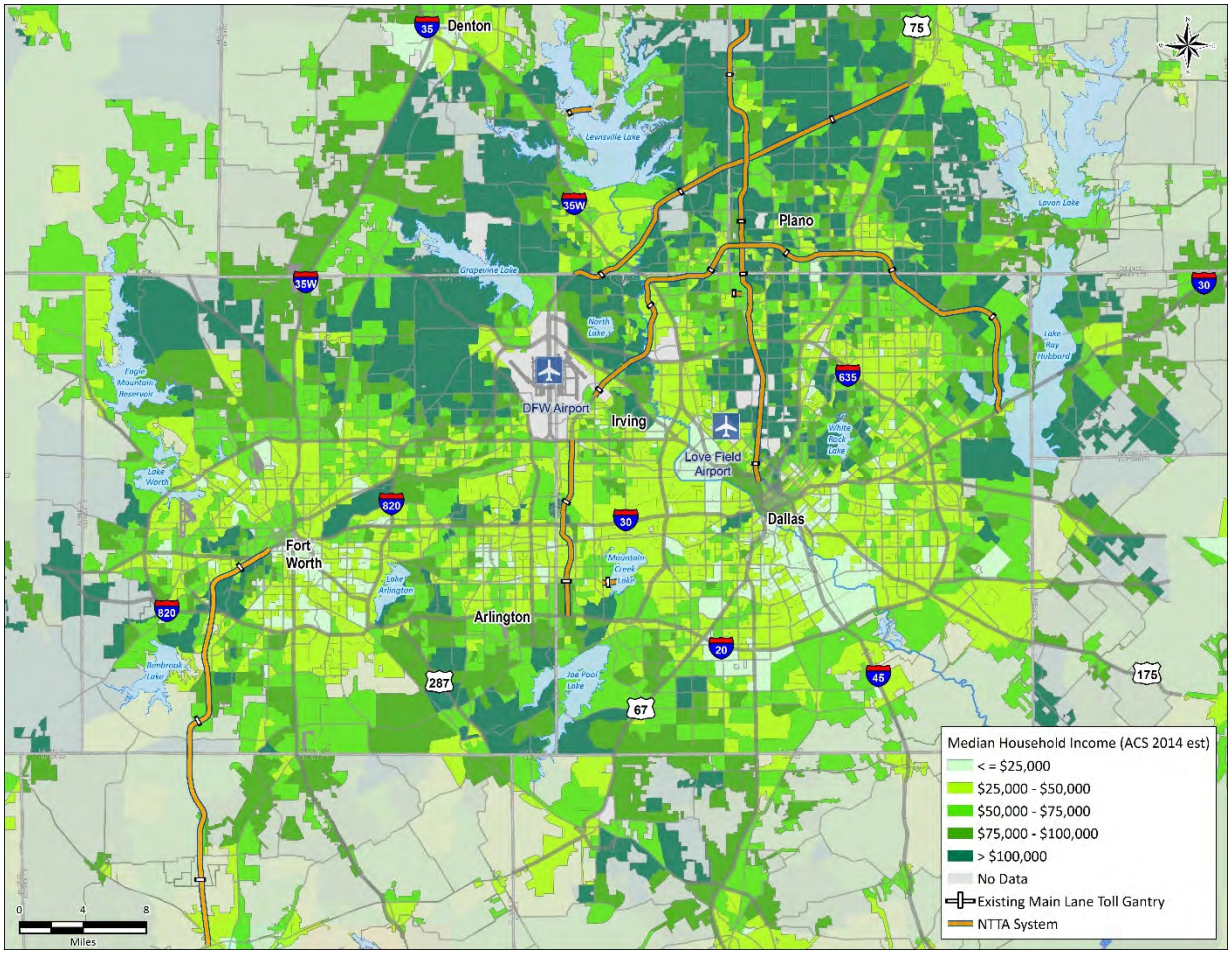


Figure 4-5.
NTTA System - Median Household Income (in Real 2014 Dollars)

SOCIOECONOMIC INDICATORS

Major Employment Establishments

NCTCOG maintains a comprehensive list of major employment establishments in the Dallas-Fort Worth (DFW) region. There are over 300 establishments in the NTTA System area that have 500 or more full-time employees. The locations of those establishments are shown in Figure 4-6. Additionally, there are several employment locations near NTTA System corridors that have over 2,500 employees, and those locations have significant potential for generating traffic on the NTTA System. Many of these employment establishments are medical institutions including Parkland Health and Hospital System, Baylor University Medical Center, Children's Medical Center, UT Southwestern Medical Center and Texas Health Presbyterian Hospital. Other major companies located near the NTTA System include AT&T, Verizon, American Airlines, Southwest Airlines, Nebraska Furniture Mart, FedEx, JC Penney and Bank of America.

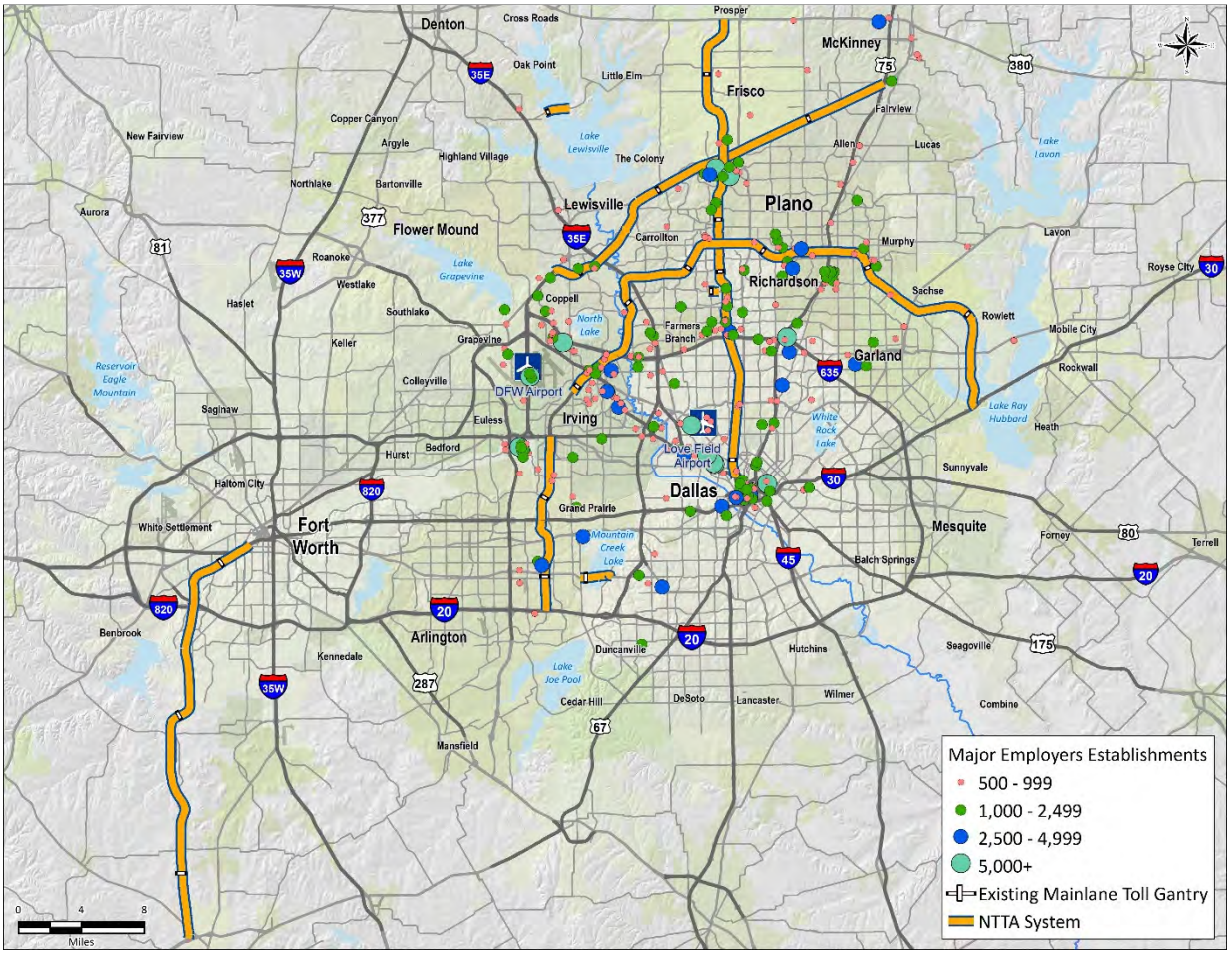


Figure 4-6.
Major Employment Establishments near NTTA System Facilities

Consumer Price Index

The consumer price index for all urban consumers (CPI-U) is the most widely used measure of inflation and serves as an economic indicator. The CPI-U determines the aggregate price level of a specific market basket of goods and services that are consumed by typical urban households. This is done by calculating the average going price of each item in the market basket. Food, clothing, housing, transportation (including tolls) and entertainment are all included in the basket. Income taxes and investment items such as stocks and bonds are not included. The Bureau of Labor and Statistics of the U.S. Department of Labor calculates the CPI-U every month.

The consumer price index for the base time frame (1982-1984) is 100. Inflation is determined by finding the percentage change in the CPI-U from one year to the next. Table 4-5 gives the historical trends for CPI-U from 1984-2017 for DFW, the Southern Region (Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, Washington D.C., and West Virginia), and the United States. As indicated in Table 4-5, the CPI-U in DFW has continually increased at a similar rate to the CPI-U for both the Southern Region and the United States. This indicates that the inflation rate in DFW is consistent with the rate of inflation seen nationwide. Between 1986 and 2016, the CPI-U in DFW region has grown at an average annual rate of 2.4 percent per year, which is a similar rate of growth experienced by the Southern Region and the nation during that time. Between 2006 and 2016, CPI-U grew at an average annual rate of 1.5 percent for DFW, at an annual rate of 1.8 percent for the Southern Region and at an average annual rate of 1.8 percent for the United States. It should also be noted that the CPI-U sharply increased between 2007 and 2008 and decreased between 2008 and 2009.

Trends in Building Permits

The housing industry accounts for a large percentage of investment spending. Building permits are leading economic indicators as they help predict where the economy is headed in the near future. Sustained declines in building permits slow the economy and can be indicative of a potential recession. Likewise, increases in this leading indicator can potentially indicate or trigger economic growth. The trends in single family residential building permits for the DFW region are presented in Figure 4-7. Single family building permits have generally continued to grow from year to year with some exceptions. Between 1988 and 2006, the total number of single family building permits increased at average annual rate of 6.6 percent in DFW. However, due to the recession, the number of building permits issued since 2006 has dropped significantly in DFW. Between 2006 and 2009, the number of single family building permits decreased at an average annual rate of more than 30 percent, and there has been growth in building permits since 2011.

Table 4-5.Consumer Price Index for All Urban Consumers

Year	Dallas - Fort Worth	Growth	Southern Region	Growth	United States	Growth
1984	104.3	--	103.8	--	103.9	--
1985	108.2	3.7%	107.1	3.2%	107.6	3.6%
1986	109.9	1.6%	108.9	1.7%	109.6	1.9%
1987	112.9	2.7%	112.4	3.2%	113.6	3.6%
1988	116.1	2.8%	116.4	3.6%	118.3	4.1%
1989	119.5	2.9%	121.5	4.4%	124.0	4.8%
1990	125.1	4.7%	127.9	5.3%	130.7	5.4%
1991	130.8	4.6%	132.9	3.9%	136.2	4.2%
1992	133.9	2.4%	136.5	2.7%	140.3	3.0%
1993	137.3	2.5%	140.8	3.2%	144.5	3.0%
1994	141.2	2.8%	144.7	2.8%	148.2	2.6%
1995	144.9	2.6%	149.0	3.0%	152.4	2.8%
1996	148.8	2.7%	153.6	3.1%	156.9	3.0%
1997	151.4	1.7%	156.9	2.1%	160.5	2.3%
1998	153.6	1.5%	158.9	1.3%	163.0	1.6%
1999	158.0	2.9%	162.0	2.0%	166.6	2.2%
2000	164.7	4.2%	167.2	3.2%	172.2	3.4%
2001	170.4	3.5%	171.1	2.3%	177.1	2.8%
2002	172.7	1.3%	173.3	1.3%	179.9	1.6%
2003	176.2	2.0%	177.3	2.3%	184.0	2.3%
2004	178.7	1.4%	181.8	2.5%	188.9	2.7%
2005	184.7	3.4%	188.3	3.6%	195.3	3.4%
2006	190.1	2.9%	194.7	3.4%	201.6	3.2%
2007	193.2	1.7%	200.4	2.9%	207.3	2.8%
2008	201.8	4.4%	208.7	4.2%	215.3	3.8%
2009	200.5	-0.6%	207.8	-0.4%	214.5	-0.4%
2010	201.6	0.5%	211.3	1.7%	218.1	1.6%
2011	207.9	3.1%	218.6	3.4%	224.9	3.2%
2012	212.2	2.1%	223.2	2.1%	229.6	2.1%
2013	216.0	1.8%	226.7	1.6%	233.0	1.5%
2014	218.4	1.1%	230.6	1.7%	236.7	1.6%
2015	217.5	-0.4%	230.1	-0.2%	237.0	0.1%
2016	220.7	1.5%	232.7	1.1%	240.0	1.3%
2017*	224.4	1.7%	236.5	1.6%	244.2	1.7%
Compounded	(1986-2016)	2.4%	(1986-2016)	2.6%	(1986-2016)	2.6%
Annual	(2006-2016)	1.5%	(2006-2016)	1.8%	(2006-2016)	1.8%
Growth	(2016-2017*)	1.7%	(2016-2017*)	1.6%	(2016-2017*)	1.7%

* Average CPI values from January to July

Source: US Bureau of Labor Statistics

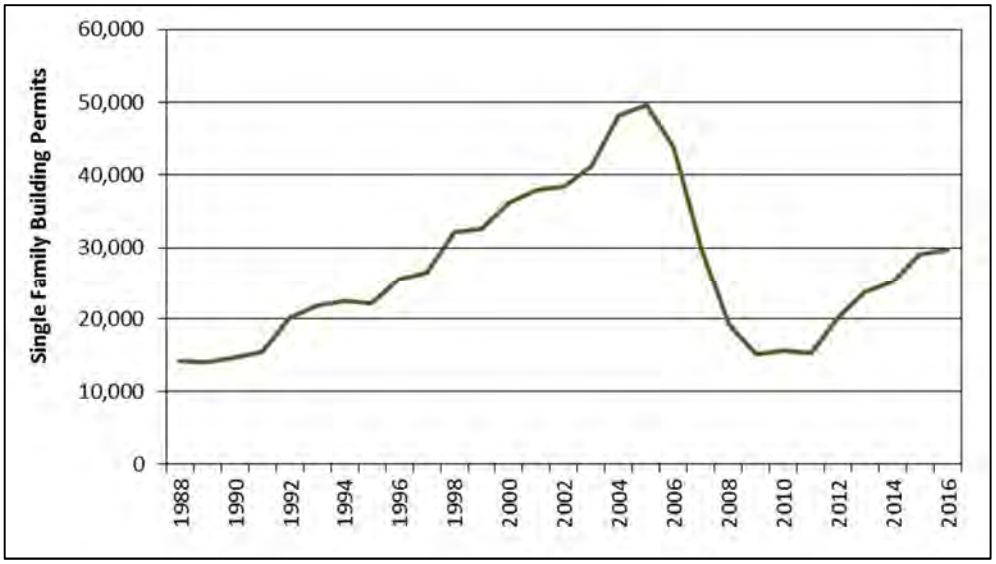


Figure 4-7.
Trends in Single Family Building Permits in Dallas-Fort Worth

Regional Home Sales

Trends in home sale prices and the number of sales can serve as a good indicator of the state of a local economy. Growth in the median sale price of area homes is presented for the Dallas multiple listing service (MLS), Collin County MLS, Denton County MLS and the state of Texas in Figure 4-8. The median price of homes sold has been steadily increasing in the DFW region and throughout the state since 2011. According to the latest Standard & Poor's Case-Shiller report, home prices in Dallas-Fort Worth have recovered more since recession than in any other U.S. market. In 2016, Dallas area home prices were eight percent higher than in 2015. Figure 4-9 shows the total number of homes sold in the Dallas Fort Worth MSA region annually since 2000. Home sales began dropping significantly in 2007 and reached a ten-year low in 2010. However, as of 2016 home sales have risen above pre-recession levels.

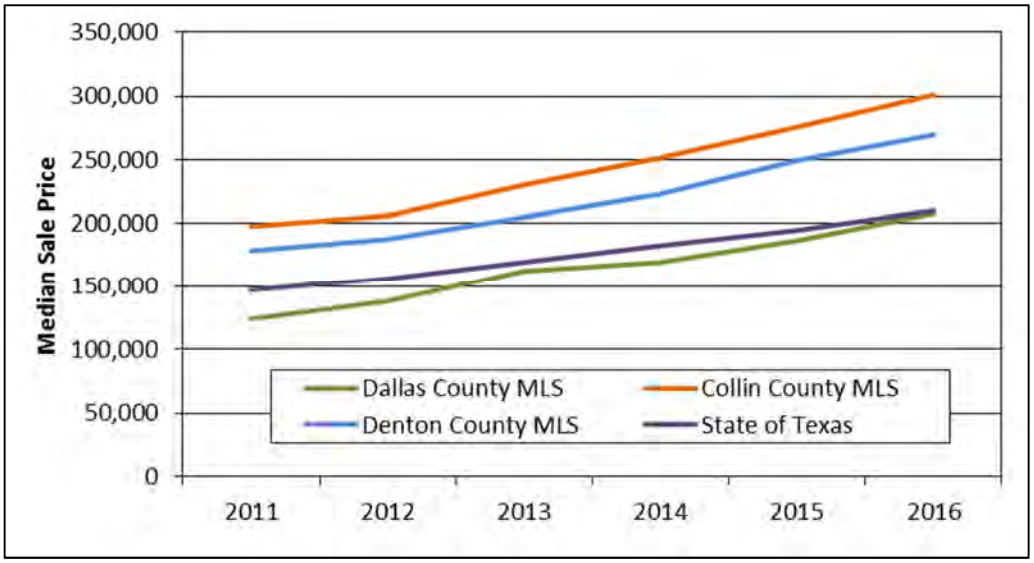


Figure 4-8.
Median Home Sale Prices
Source: Texas A&M Real Estate Center

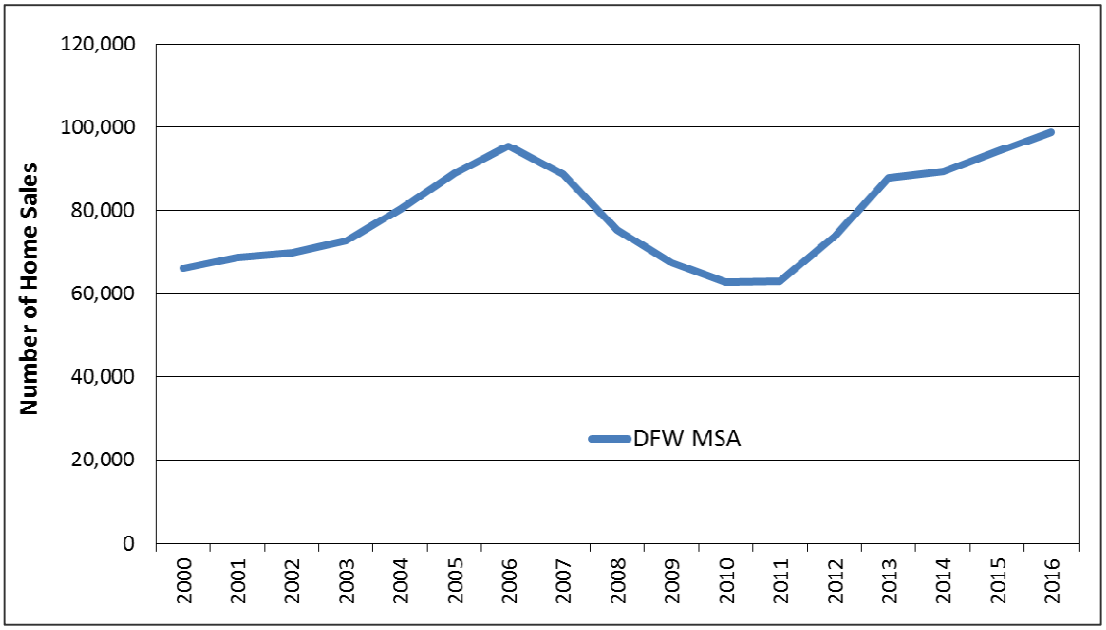


Figure 4-9.
Dallas Fort Worth MSA Area Home Sales
Source: Texas A&M Real Estate Center

Gasoline Prices

Figure 4-10 shows the average weekly gasoline price in Texas over the past five years. Trends in gasoline prices in Texas fell sharply during the second half of 2014 and dropped below $2.00 per gallon for the first time since early 2012. Prices have remained relatively consistent since that time, and were just slightly above $2.00/gallon as of August 2017.

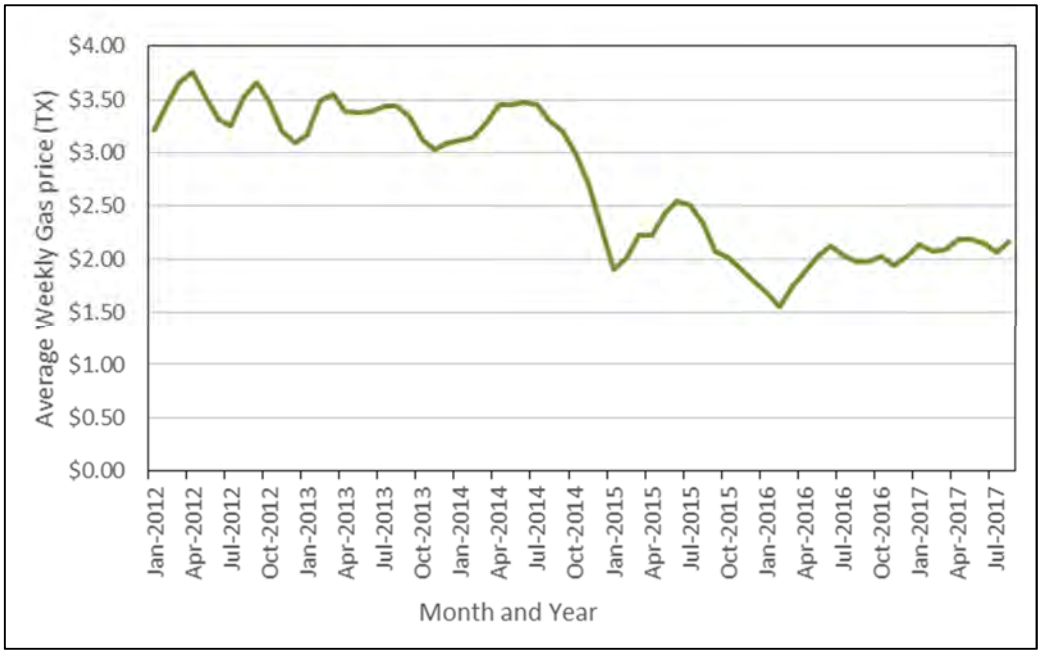


Figure 4-10.
Average Weekly Gasoline Prices in Texas
Source: US Energy Information Administration

INDEPENDENT ECONOMIC REVIEW

The Dallas/Fort Worth area is a dynamic and rapidly growing economic region of Texas. Given the high demographic growth in the DFW region, an independent economic review was necessary for more micro level review of the demographics along NTTA System facility corridors. To get a better estimate of the future employment and population within the study area, CDM Smith engaged Research and Demographic Solutions (RDS) in 2017 to perform an independent economic review and development updates along NTTA System corridors. The findings of the economic review are included in Appendix A. The qualifier "official" refers to the NCTCOG demographics datasets, which were prepared by NCTCOG as part of Mobility 2040. The "probable" population and employment forecasts made by RDS to update the NCTCOG official demographics datasets along NTTA System corridors are referred to as the "revised" demographic datasets.

Future Population and Employment along NTTA System Corridors

The revised population and employment growth between 2017 and 2040 for the NTTA System area of influence disaggregated at the TAP zone level is highlighted in Figure 4-11 and Figure 4-12.

Population Growth Estimates

Figure 4-11 identifies the annual compounded growth rates for population in the revised demographic forecasts. Many of the zones in the NTTA System area show anticipated annual population growth rates of less than 2.5 percent between 2017 and 2040. However, although several zones are expected to generate small population growth by 2040, many of the zones with large forecasted growth in population are located directly adjacent to NTTA System facilities. As seen in Figure 4-11, there are several high population growth zones along the PGBT, DNT, SRT and CTP.

Employment Growth Estimates

Figure 4-12 identifies the annual compounded growth rates for employment in the NTTA System area. Many of the zones show anticipated annual employment growth rates of less than 2.5 percent between 2017 and 2040. Zones with higher projected employment growth are more concentrated in Collin County, Denton County, southwestern Dallas County and southern Tarrant County.

Comparison of Official and Revised Demographics

Tables 4-6 and 4-7 show a comparison of the official and revised demographics (population and total employment) projections for Collin County, Dallas County, Denton County, Rockwall County and Tarrant County for years 2017, 2027, 2037, and 2040. In 2017, the revised population estimates are higher than NCTCOG official demographics for every county except Tarrant. The revised 2040 revised population forecast is higher for Collin County, Denton County, Johnson County and Rockwall County and is lower for Dallas and Tarrant County in comparison to the official forecast. The revised employment forecast in 2040 is lower for Dallas County in comparison to the official employment forecast (see Table 4-7).

Figures 4-13 through 4-16 show a comparison of NCTCOG's official population and the revised population forecast near the NTTA System for the years 2017, 2027, 2037 and 2040. The revised population forecast is generally higher than the NCTCOG forecast through the NTTA System area, with some reasonably large increases in Collin County and Denton County. Figures 4-17 through 4-20 show a comparison of NCTCOG's official employment and the revised employment forecast near the NTTA System for the years 2017, 2027, 2037 and 2040. As shown in the figures, the revised employment is general lower than the official NCTCOG forecast across much of the study area, with the exception of some significant increases in Collin County and Denton County, many of which lie along NTTA corridors.

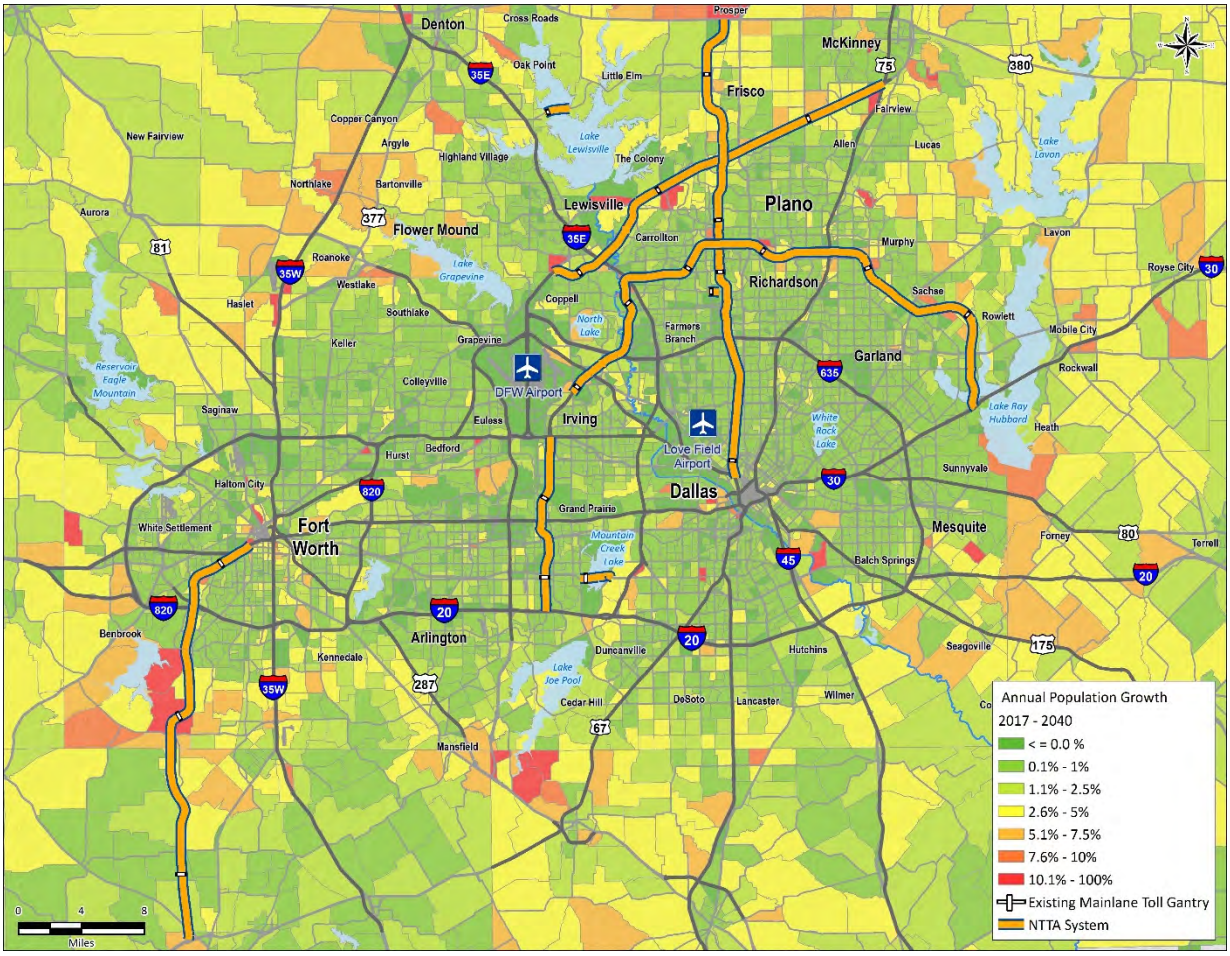


Figure 4-11.
Average Annual Population Growth: 2017-2040

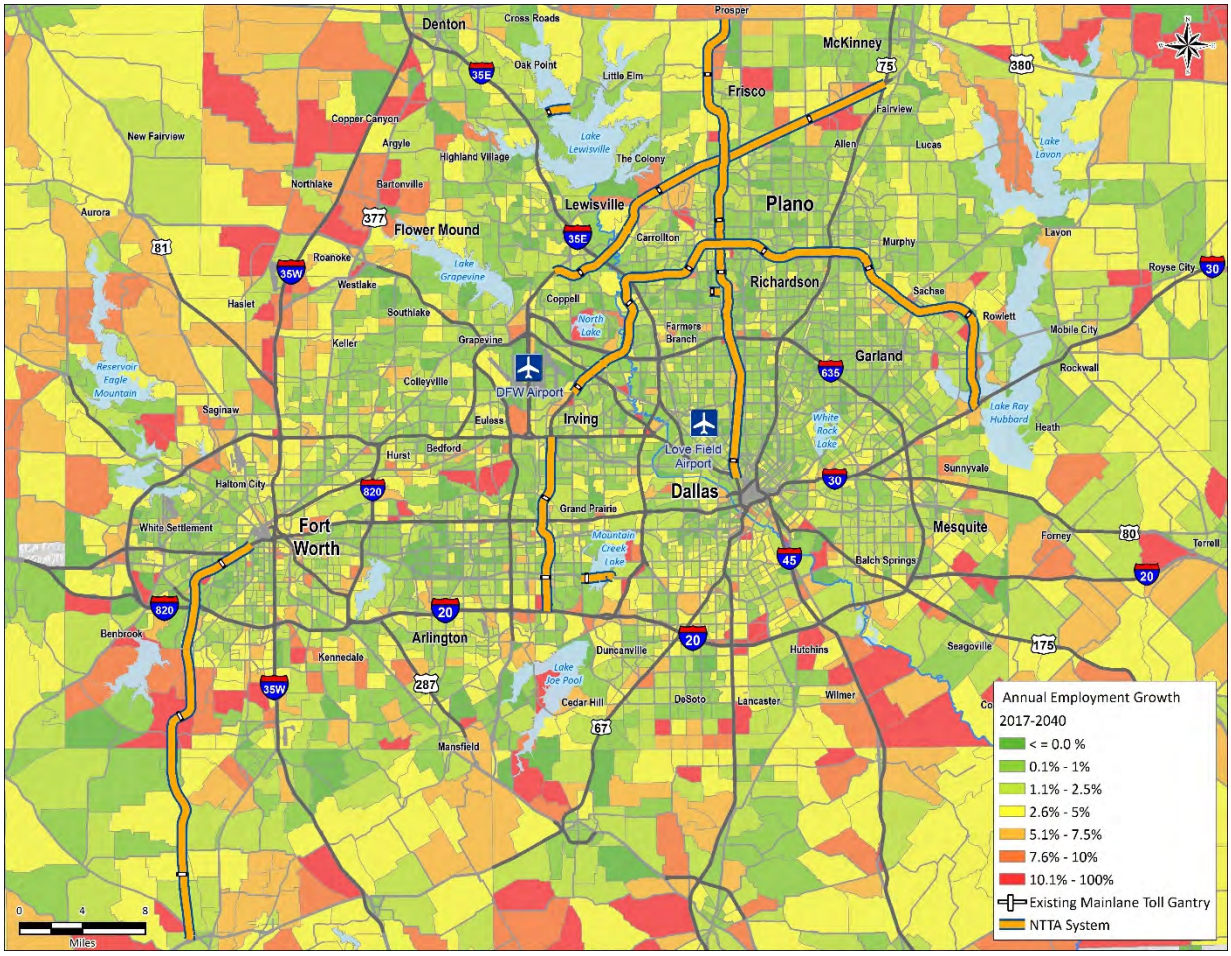


Figure 4-12.
Average Annual Employment Growth: 2017-2040

Table 4-6.Population Forecast Comparisons

County	2017			2027		
	Official (000's)	Revised (000's)	Change (%)	Official (000's)	Revised (000's)	Change (%)
Collin County	951.8	973.3	2.3	1,204.5	1,296.9	7.7
Dallas County	2,600.4	2,624.0	0.9	2,804.5	2,864.7	2.2
Denton County	804.4	816.9	1.6	979.3	1,014.1	3.6
Johnson County	158.7	168.0	5.9	200.1	204.6	2.2
Rockwall County	93.4	96.8	3.6	126.5	136.0	7.5
Tarrant County	2,020.3	2,015.6	-0.2	2,460.1	2,373.3	-3.5
County	**2037**			**2040**		
	Official (000's)	Revised (000's)	Change (%)	Official (000's)	Revised (000's)	Change (%)
Collin County	1,478.3	1,606.3	8.7	1,560.4	1,694.6	8.6
Dallas County	3,229.9	3,118.3	-3.5	3,357.5	3,191.6	-4.9
Denton County	1,181.1	1,214.0	2.8	1,241.7	1,284.3	3.4
Johnson County	240.4	247.2	2.8	252.5	260.1	3.0
Rockwall County	157.2	167.0	6.2	166.4	176.9	6.3
Tarrant County	2,948.2	2,688.7	-8.8	3,094.6	2,785.3	-10.0

Table 4-7.Employment Forecast Comparisons

County	2017			2027		
	Official (000's)	Revised (000's)	Change (%)	Official (000's)	Revised (000's)	Change (%)
Collin County	542.5	544.1	0.3	606.4	650.1	7.2
Dallas County	2,147.0	2,099.5	-2.2	2,559.0	2,425.4	-5.2
Denton County	298.1	285.4	-4.2	346.8	357.7	3.2
Johnson County	75.5	61.6	-18.4	85.5	86.3	0.9
Rockwall County	39.9	39.4	-1.2	43.2	48.4	11.9
Tarrant County	1,196.5	1,118.3	-6.5	1,393.5	1,429.9	2.6
County	**2037**			**2040**		
	Official (000's)	Revised (000's)	Change (%)	Official (000's)	Revised (000's)	Change (%)
Collin County	726.8	757.8	4.3	762.9	791.4	3.7
Dallas County	3,050.1	2,740.5	-10.2	3,197.5	2,839.7	-11.2
Denton County	422.4	438.5	3.8	445.1	464.1	4.3
Johnson County	100.7	103.0	2.3	105.2	108.0	2.6
Rockwall County	51.0	56.4	10.6	53.4	58.9	10.4
Tarrant County	1,659.5	1,697.0	2.3	1,739.3	1,793.7	3.1

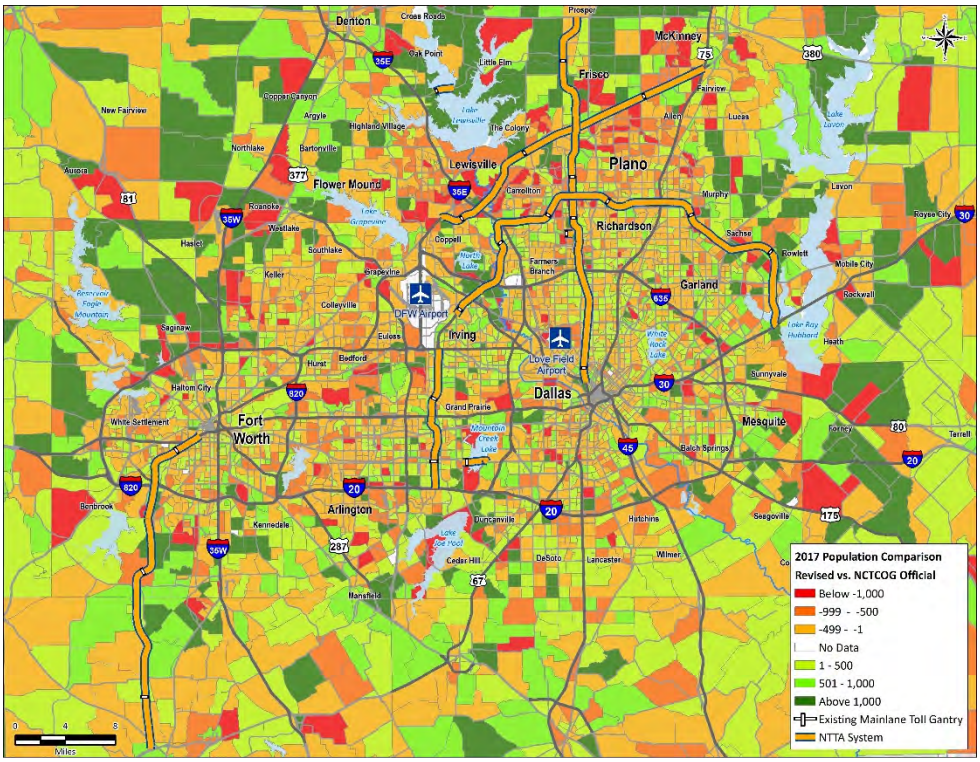


Figure 4-13.
2017 Population Comparison: Revised vs. NCTCOG Official

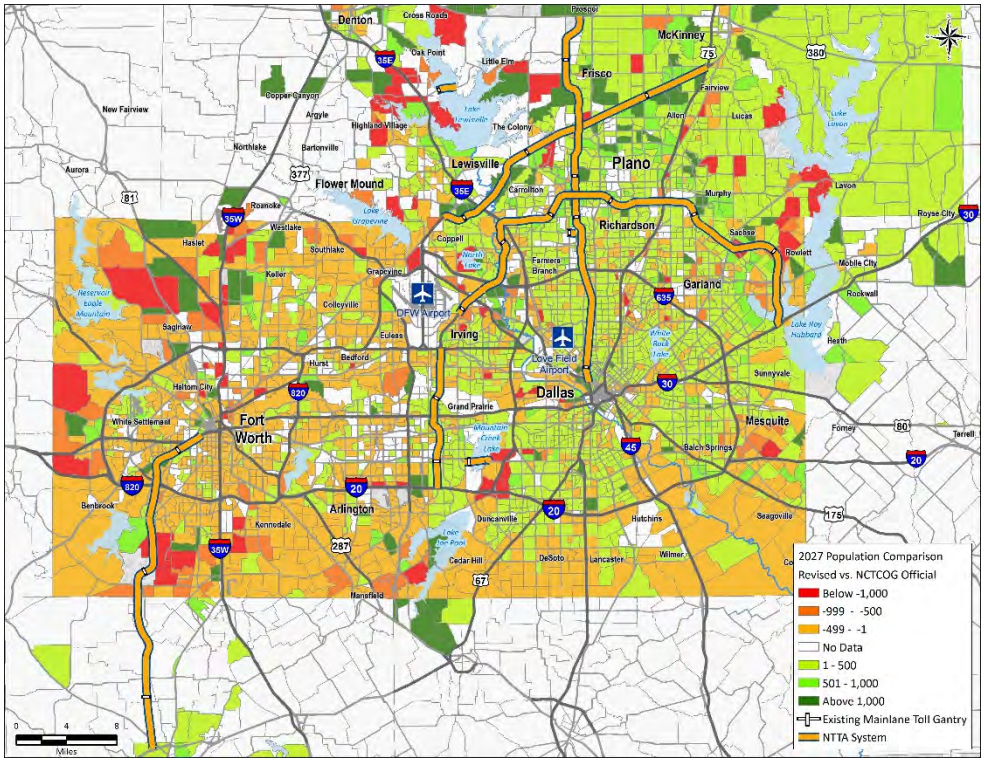


Figure 4-14.
2027 Population Comparison: Revised vs. NCTCOG Official

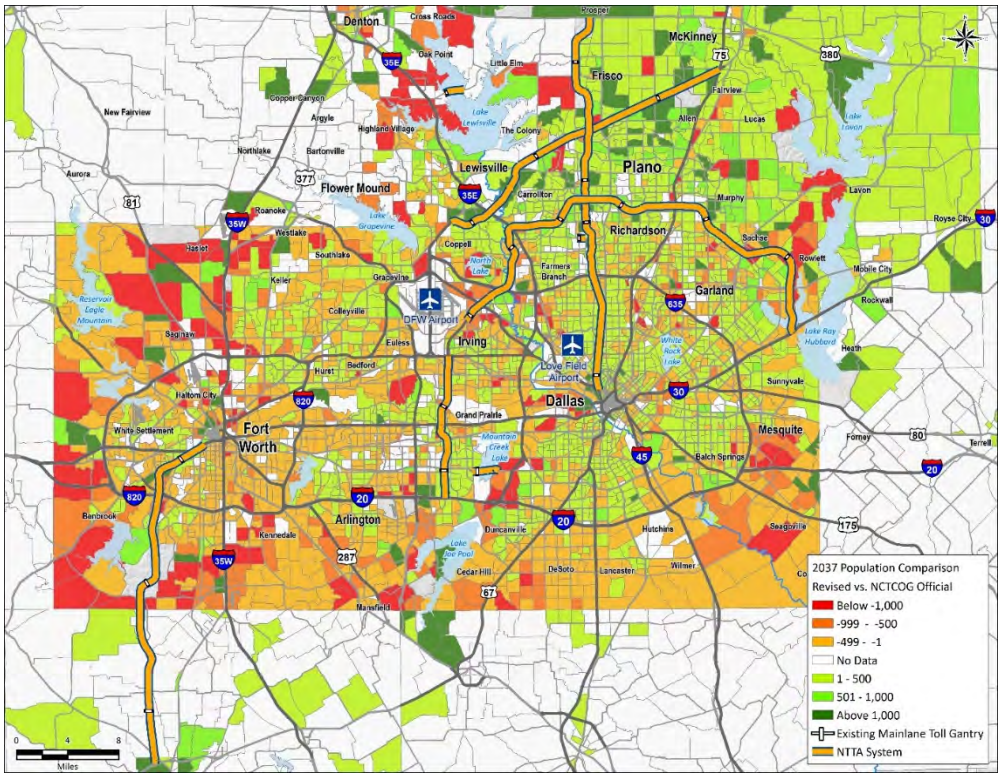


Figure 4-15.
2037 Population Comparison: Revised vs. NCTCOG Official

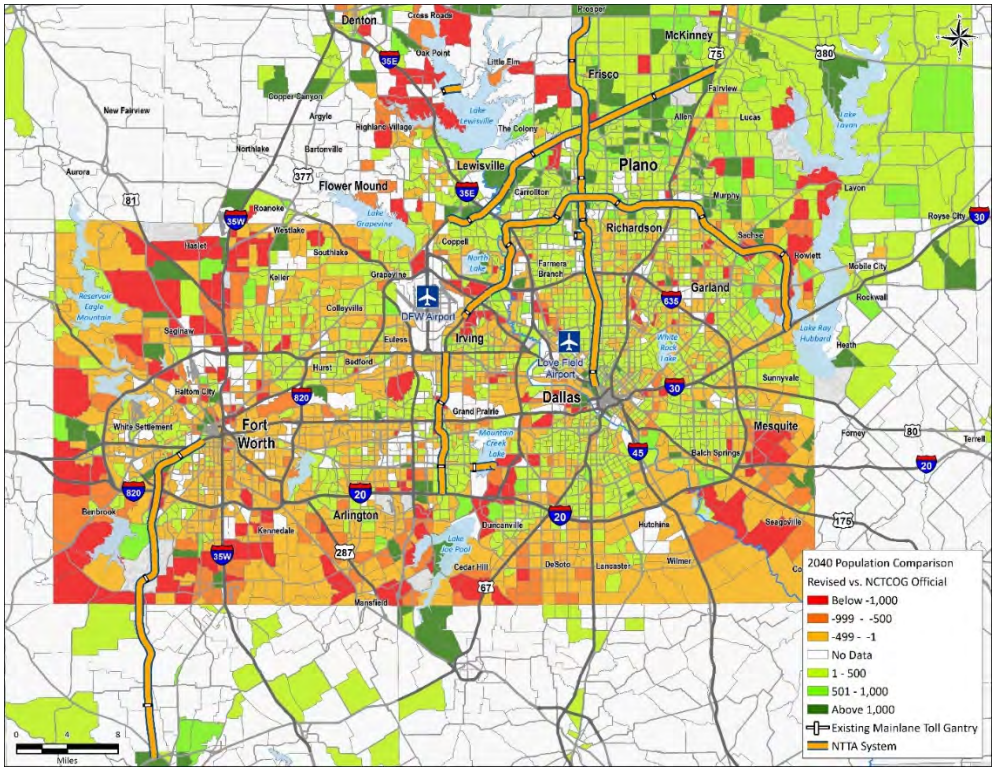


Figure 4-16.
2040 Population Comparison: Revised vs. NCTCOG Official

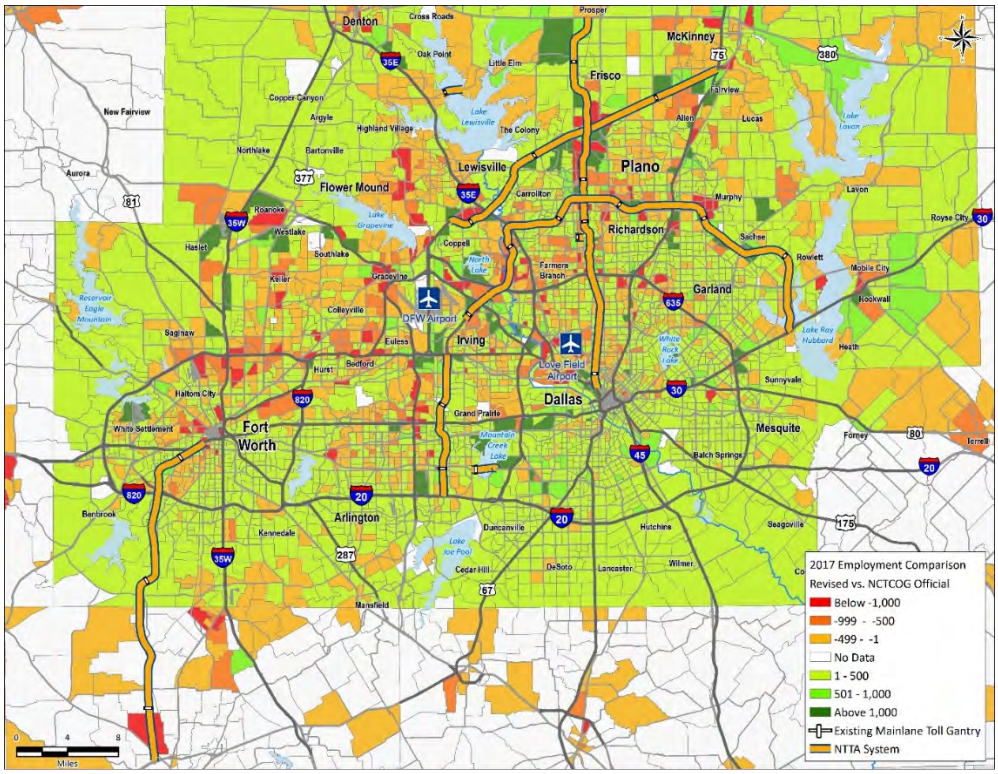


Figure 4-17.
2017 Employment Comparison: Revised vs. NCTCOG Official

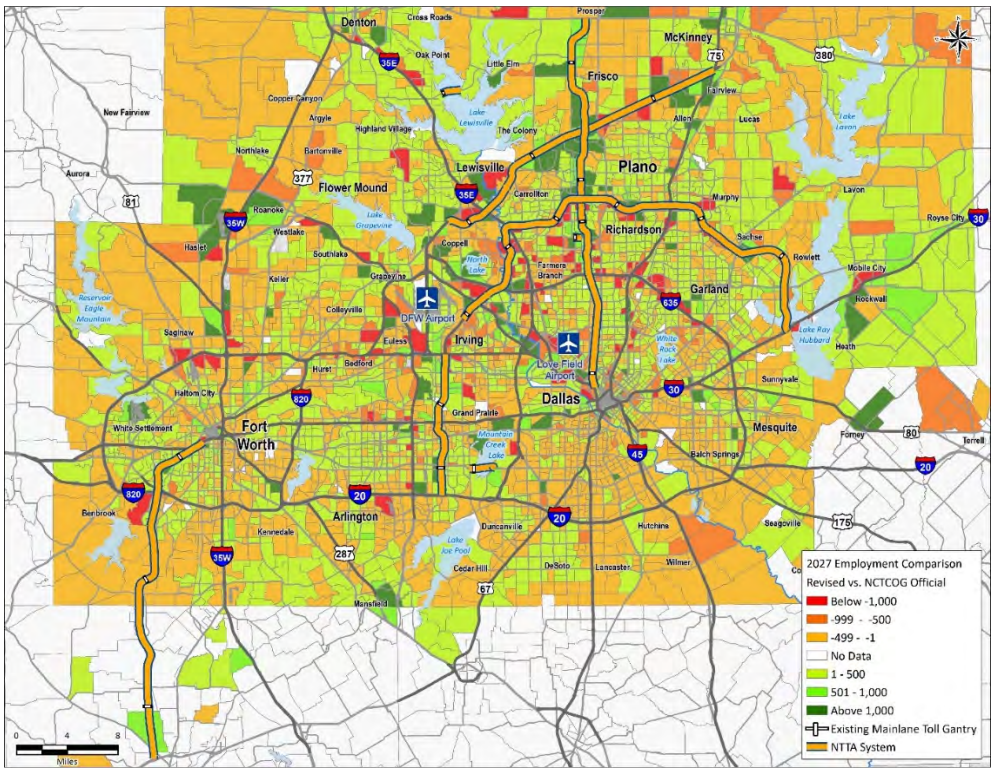


Figure 4-18.
2027 Employment Comparison: Revised vs. NCTCOG Official

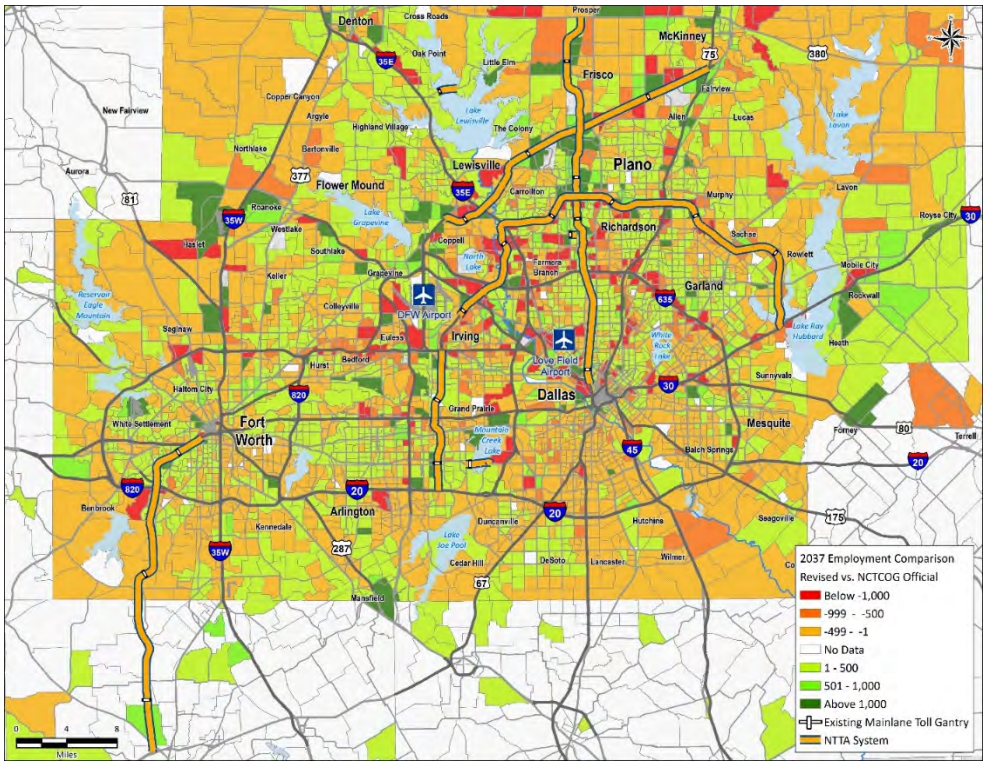


Figure 4-19.
2037 Employment Comparison: Revised vs. NCTCOG Official

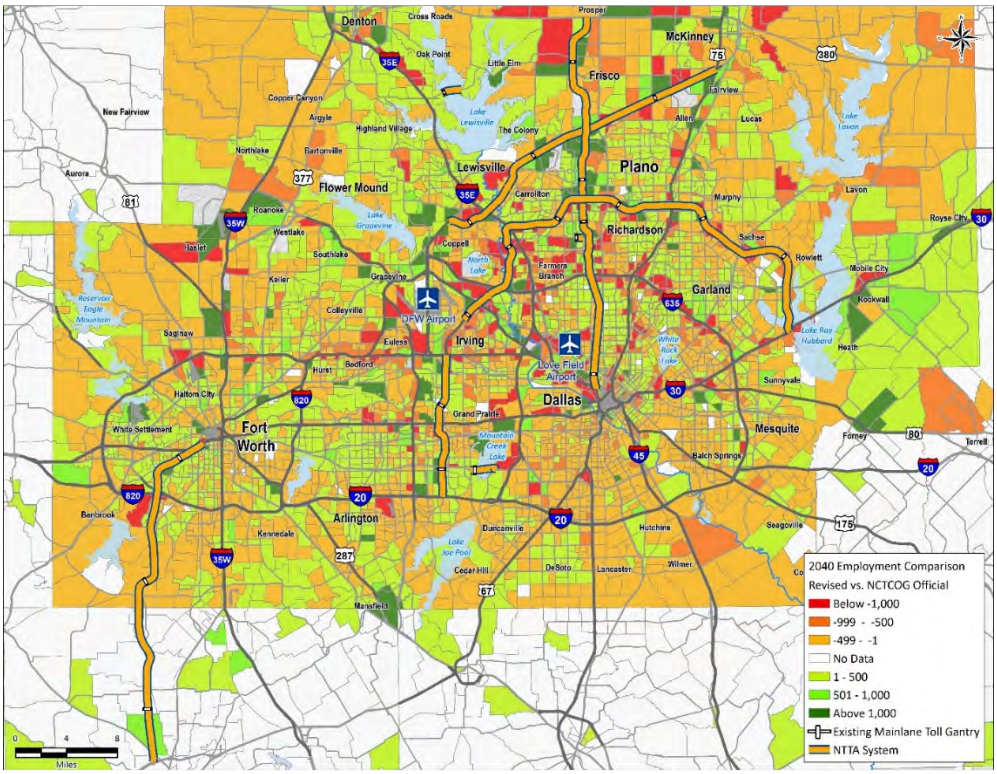


Figure 4-20.
2040 Employment Comparison: Revised vs. NCTCOG Official

Section 5

Travel Demand Model Development

This section describes the travel demand model validation process, including database modifications and updates to the TransCAD network and socio-economic characteristics in the vicinity of NTTA System roadways. Figure 5-1 illustrates the travel demand process used by CDM Smith for developing the traffic and toll revenue forecasts. This methodology ensures that results are consistent with previous analyses done for NTTA by CDM Smith for toll facilities in the Dallas/Fort Worth (DFW) area.

NCTCOG INFORMATION

For this study, the latest travel demand model information was obtained from NCTCOG. This includes the latest official demographics used in the Mobility 2040 Plan. The data includes:

- NCTCOG 5,386-zone TransCAD network structure
- Highway network characteristics for the years 2017, 2027, 2037 and 2040 in TransCAD format
- Socioeconomic information at the 5,386-zone Transportation Analysis Process (TAP) level for the years 2017, 2027, 2037 and 2040
- Trip tables (zone to zone matrices) for single occupant vehicles (SOV), high-occupancy vehicles (HOV), and trucks for years 2017, 2027, 2037 and 2040. These trip tables were provided for the AM peak (6:30 to 9:00 AM), PM peak (3:00 to 6:30 PM), and off-peak (9:00 AM to 3:00 PM and 6:30 PM to 6:30 AM) periods.

HIGHWAY NETWORK UPDATE

NCTCOG's DFW highway model networks reflect the latest regional transportation improvements recommended in Mobility 2040. The networks incorporate all existing NTTA and TxDOT toll facilities and numerous other planned facilities in the DFWMA. Existing toll facilities were coded to reflect all current ramp and main lane toll charges.

The 2017, 2027, 2037 and 2040 networks provided by NCTCOG were reviewed for consistency and fine-tuned based on the travel time characteristics and traffic counts collected within the NTTA System corridors as described in Section 2. This is the model network calibration process. The calibrated networks were then used to develop the forecasted NTTA System traffic and toll revenue streams. The 2017 network was used as the base year for model validation purposes.

The travel time data collected were used to adjust the free-flow speeds along NTTA System facilities and competing/parallel roadways. These adjustments accounted for geometric and operational characteristics of the major facilities that are typically not captured or reflected as part of a regional NCTCOG validation process of travel time attributes. Some typical factors that can influence traffic flow in the corridor are intersection design constraints, traffic signal and stop sign impedances, narrow median design, and multiple entry point characteristics.

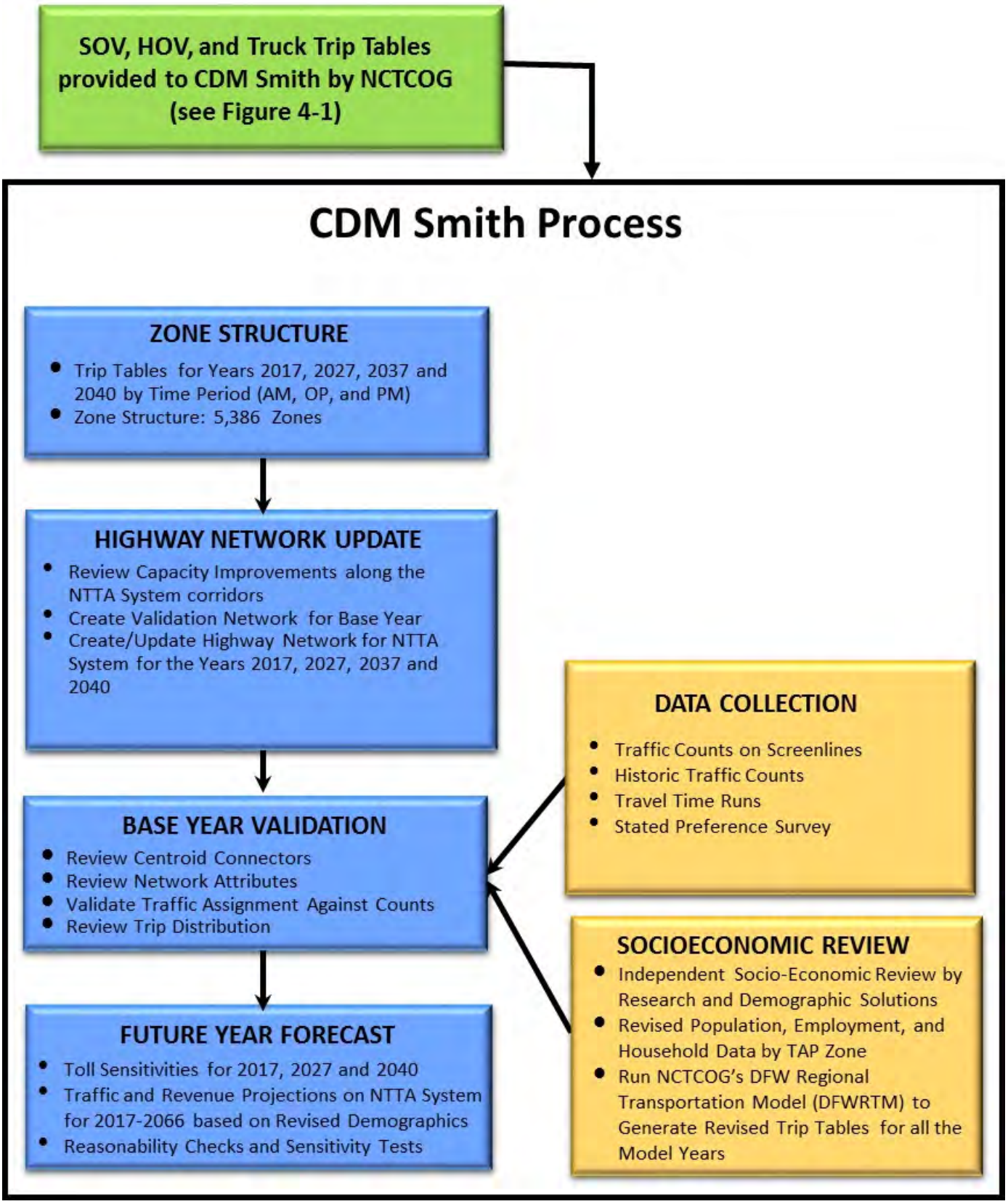


Figure 5-1.
NTTA System - Travel Demand Process

MODEL VALIDATION

The model validation process involved comparing the 2017 traffic assignment output volumes based on the revised demographics against traffic counts obtained for this study and toll transactions at all existing NTTA ramp and mainlane toll gantries. Output travel times and speeds from the travel demand model were also compared to the actual travel time information. This process was performed for each of the time periods modeled (AM peak, PM peak, and off-peak).

CDM Smith combined traffic count data collected in 2015, 2016, and 2017 with toll transaction data to validate the model and adjust the network characteristics where needed. Twenty-one screenlines were developed along the NTTA System corridors and at several strategic locations to analyze the total corridor traffic distribution and to ensure that the base model outputs reflected current traffic characteristics within those corridors. Screenlines 1 through 4 analyzed traffic in the northbound and southbound directions running parallel to the DNT at each of its four mainlane gantries. Screenlines 5 through 10 analyzed traffic corresponding to the six mainlane gantries on the PGBT. Screenlines S1 through S3 correspond to the three mainlane gantries on the SRT in addition to the two-mile existing toll-free section of SRT northeast of the IH 35E/SRT interchange. On PGBT WE, three screenlines were analyzed (W1, W2 and W3), and five screenlines across the Chisholm Trail Parkway were used for the validation effort (C1, C2, C3, C4 and C5). The locations of the twenty-one screenlines are shown in Figures 5-2 through 5-4.

As part of the validation process, trips between select origin/destination pairs included in the revised trip tables were adjusted to better reflect observed traffic counts. Table 5-1 shows a comparison of the model output volumes based on revised demographics and the daily traffic count volumes for each of the thirteen screenlines. The model output daily volumes matched closely to the traffic count volumes. Additionally, the average speeds from the model output were compared to the observed speeds collected as part of the travel time runs described in Section 2 to ensure that the model accurately reflects existing traffic conditions.

Travel demand modeling practitioners in the United States use "NCHRP 255: Highway Traffic Data for Urbanized Area Project Planning and Design," published by the Transportation Research Board to check the reasonableness of model validation. As shown in Figure 5-5, the percentage difference between the model volumes and traffic is within the acceptable range for each of the thirteen screenlines according to this widely accepted model validation standard.

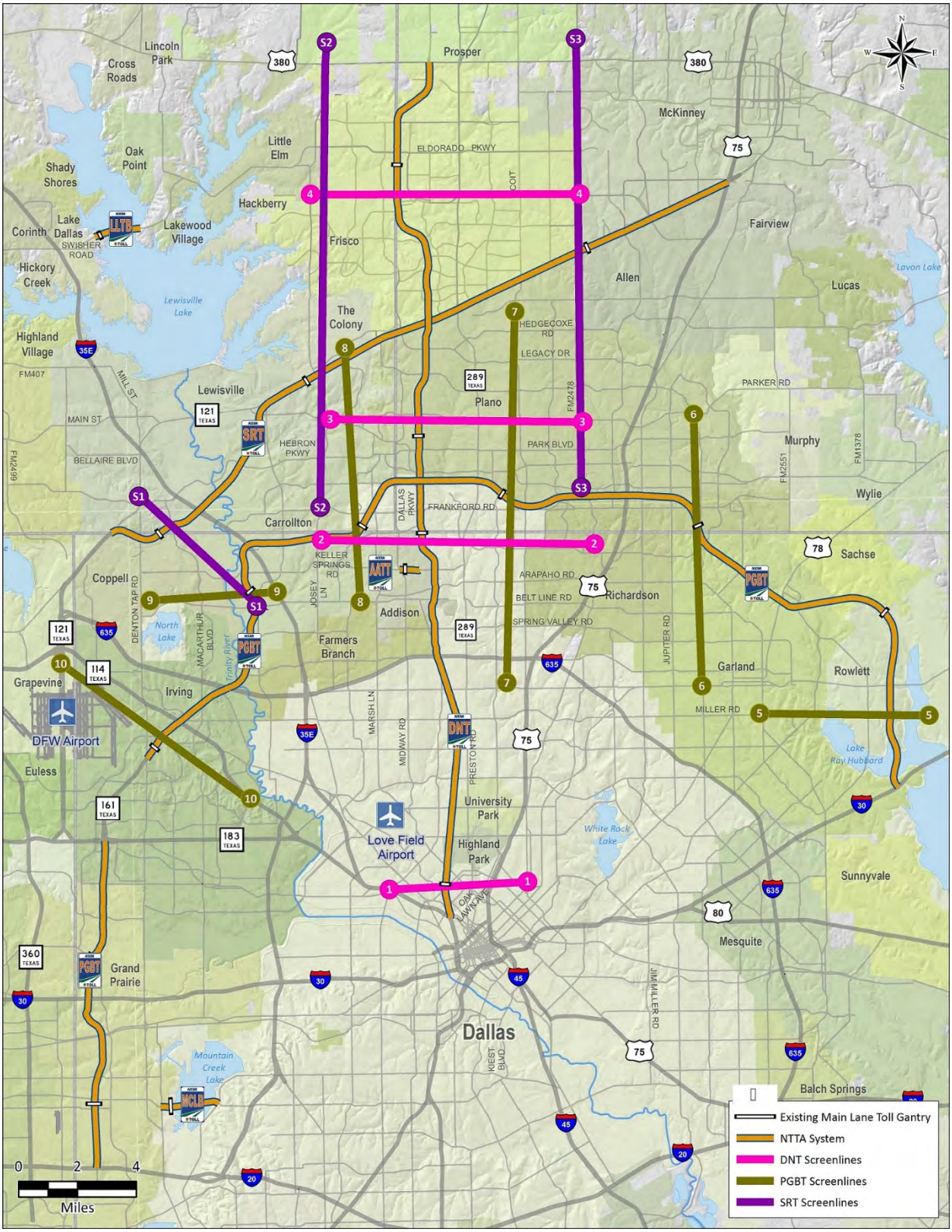


Figure 5-2.
DNT, PGBT and SRT Screenline Locations

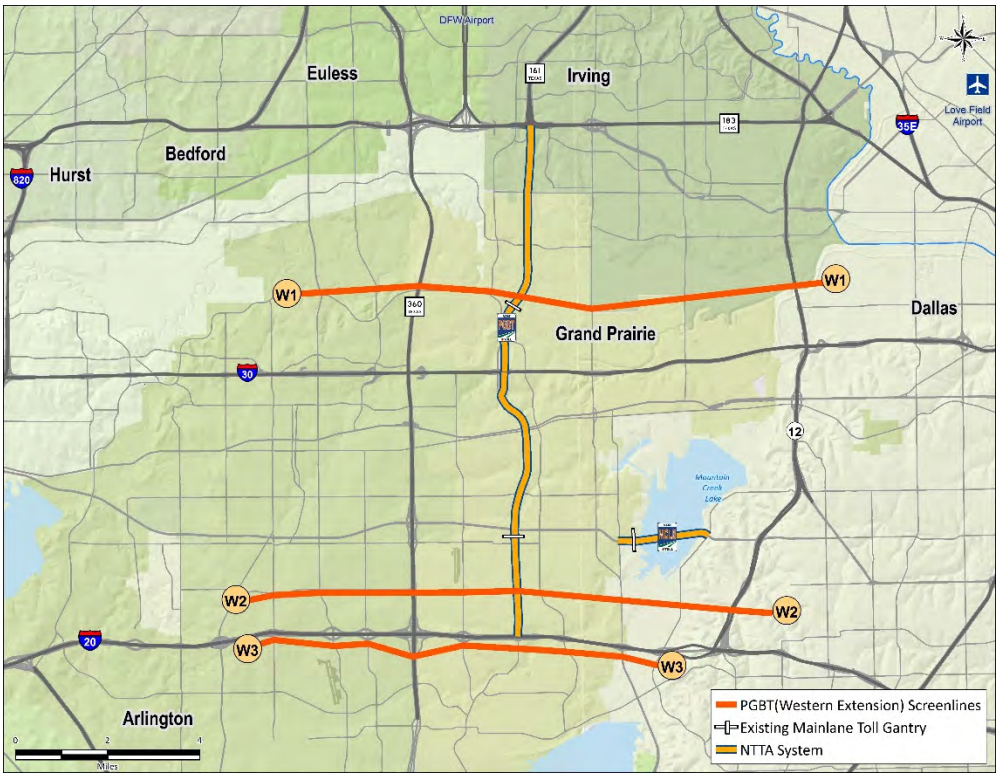


Figure 5-3.
PGBT WE Screenline Locations

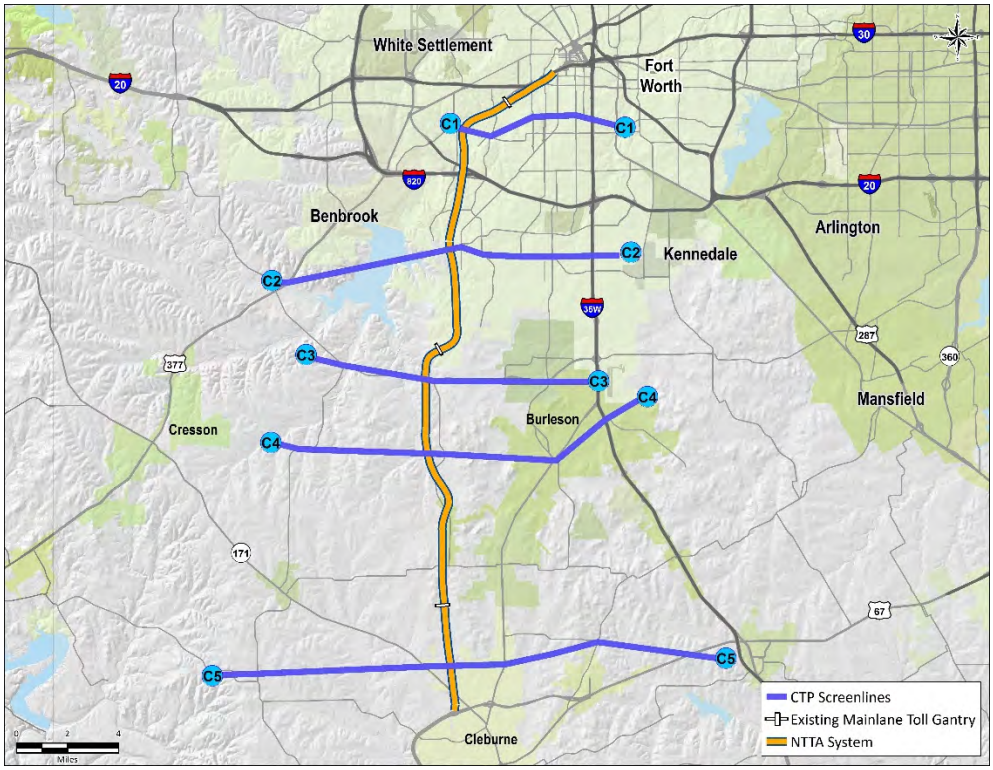


Figure 5-4.
CTP Screenline Locations

Table 5-1. Comparison of Traffic Counts and Model Output: Daily Total

Screenline Location	Screenline Total		
	Traffic Counts	Model Output	Difference
Dallas North Tollway			
Screenline 1	829,100	807,300	-2.6%
Screenline 2	718,600	651,300	-9.4%
Screenline 3	406,000	371,400	-8.5%
Screenline 4	266,100	261,100	-1.9%
President George Bush Turnpike			
Screenline 5	175,500	151,400	-13.7%
Screenline 6	375,200	410,600	9.4%
Screenline 7	438,700	401,300	-8.5%
Screenline 8	310,300	297,400	-4.2%
Screenline 9	346,000	348,200	0.6%
Screenline 10	344,200	368,100	6.9%
Sam Rayburn Tollway			
Screenline S1	222,900	201,700	-9.5%
Screenline S2	331,200	289,500	-12.6%
Screenline S3	414,700	392,800	-5.3%
PGBT Western Extension			
Screenline W1	347,800	324,100	-6.8%
Screenline W2	328,600	290,500	-11.6%
Screenline W3	201,200	193,000	-4.1%
Chisholm Trail Parkway			
Screenline C1	152,000	136,300	-10.3%
Screenline C2	75,400	77,500	2.8%
Screenline C3	354,300	384,900	8.6%
Screenline C4	276,200	275,900	-0.1%
Screenline C5	287,100	281,400	-2.0%

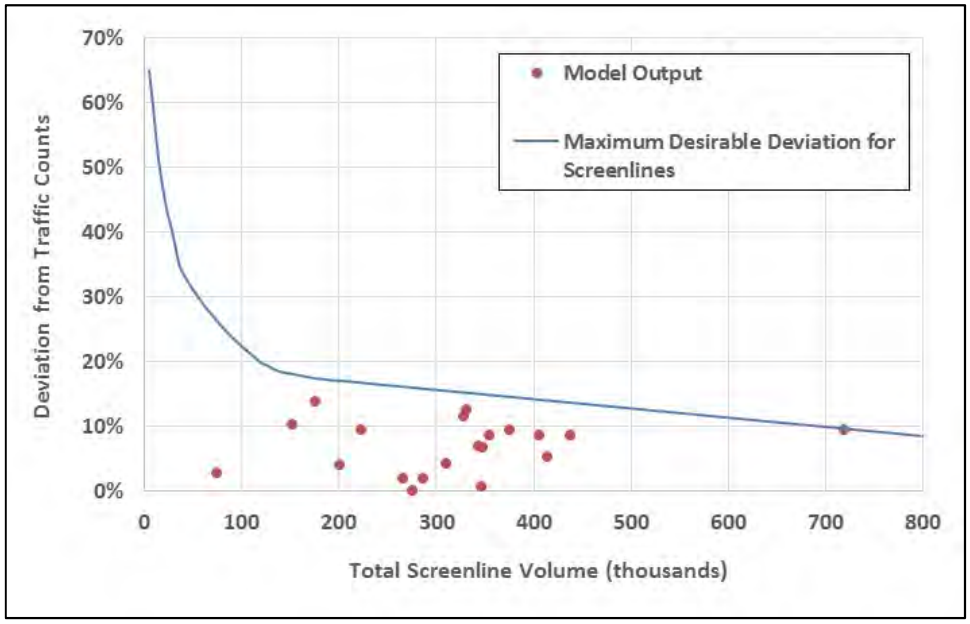


Figure 5-5.
NTTA System - Screenline Traffic Validation

MODELING METHODOLOGY

State-of-the-practice professional procedures were used in the development of the traffic and revenue forecasts for the NTTA System. The CDM Smith market share diversion routines designed specifically to emulate motorists' willingness to pay tolls at different toll levels and congestion conditions were used to test the toll sensitivities within the corridor for the years 2017, 2027 and 2040.

The toll diversion traffic assignments were run using an equilibrium diversion technique to evaluate the toll traffic potential of the NTTA System facilities. In the traffic assignment process, the travel model builds two paths between each pair of zones: one that includes toll road mainlane links and another path that excludes toll road mainlane links. The travel cost associated with using both travel paths is computed, and the volume of trips using the toll facility is then estimated based on travel time savings between the two paths. This technique simulates the driver's decision to use a toll or toll free route, which depends to a large extent on marginal differences in time and cost between the routes.

Time Cost and Vehicle Operating Costs

In addition to tolls, two other end-user costs are considered when calculating the total cost of a trip on the NTTA System: time cost and vehicle operating costs. The motorists' time cost is calculated using value of time estimates that are integrated into the modeling process. How travelers value their travel time helps them determine which route to use for a particular trip. The value of time parameter provides a measure to convert travel time into an equivalent monetary cost for inclusion in the toll diversion process. Vehicle operating costs include a multitude of additional costs to travelers such as wear and tear, maintenance, tires, oil, fuel and other variable costs.

Value of Time

The values of time used for this study were derived from the stated preference (SP) survey conducted by Resource Systems Group (RSG) as part of the October 2011 Study. The results of the survey allowed CDM Smith to calculate values of time in the NTTA System study area and surrounding counties. CDM Smith requested from RSG an assessment of current values of time in an update letter. Based on RSG's updated memo (Appendix B), 2016 VOT is recommended to be calculated by multiplying a factor of 1.059 times that of 2013 VOT. Values of time were assumed to inflate at an average annual rate of 2.25 percent between 2016 and 2020, and at a rate of 2.5 percent from 2020 onward. The average peak period and off-peak period values of time for the twelve counties in the model area are shown in Table 5-2.

Table 5-2. Value of Time by Counties (2016 $/Hour)

County	Peak	Off-Peak	County	Peak	Off-Peak
Collin	$14.17	$14.17	Johnson	$12.74	$8.89
Dallas	$13.48	$13.48	Kaufman	$13.63	$13.63
Denton	$14.00	$14.00	Parker	$14.72	$9.76
Ellis	$13.71	$13.71	Rockwall	$14.32	$14.32
Hood	$13.87	$9.20	Tarrant	$13.27	$9.91
Hunt	$13.46	$13.46	Wise	$14.37	$9.53

Vehicle Operating Costs

The vehicle operating cost used in the analysis was calculated by taking into account the average per-mile costs of gasoline and oil, and to a lesser extent on maintenance, and wear and tear of tires for vehicles in the area. It was also assumed that fuel efficiency of vehicles will improve in future years. The average fuel efficiency of passenger cars was assumed to increase from approximately 27 miles per gallon in 2011 to 52 miles per gallon in 2025 based on Corporate Average Fuel Economy (CAFÉ) standards as defined in Federal Register /Vol. 77 No. 199 (Table I-2). Beyond 2025, the fuel efficiency is assumed to improve at a slower rate. Future gasoline prices are assumed to increase to $3.00 (in 2014 dollars) by year 2020. The resulting vehicle operating costs adopted for this study are shown in Table 5-3.

Table 5-3. Vehicle Operating Costs ($/mile)

Year	Passenger Cars	Commercial Vehicles
2016	$0.16	$0.83
2020	$0.19	$1.02
2025	$0.20	$1.07
2035	$0.24	$1.25
2040	$0.26	$1.34

Revised Demographics and Trip Tables

Traffic and revenue estimates along NTTA System corridors that are presented in Section 6 of this report are based on the revised demographic datasets developed by Research and Demographic Solutions (RDS), as described in Section 4. The updated demographic datasets were used as an input to the NCTCOG DFW Regional Travel Model (DFWRTM) to generate an alternate set of trip tables and are referred to as the "revised" trip tables. These revised trip tables, with adjustments to trips applied as part of the base year validation process, were used to estimate the traffic and revenue along the NTTA System corridors.

GENERAL ASSUMPTIONS

The forecasted traffic volumes and estimated toll revenues from this study are based on the following general assumptions, which CDM Smith believes are reasonable for the purposes of this study (a more detailed description of revenue estimation assumptions can be found in Section 6):

1. By December 31, 2017, DNT's expansion to four lanes between Trinity Mills Road and PGBT in the northbound direction and between PGBT and Belt Line Road exit in the southbound direction is assumed.

2. Improvements along DNT between SRT and PGBT, including the full opening of the new Windhaven Parkway toll ramps, are assumed starting April 1, 2018. There is a ramp reversal between Windhaven and Parker Road. All Plano Parkway ramps are assumed to remain toll-free throughout the forecast period.

3. DNT Extension Phase 4A (US 380 to FM 428) is assumed to open to traffic by January 1, 2025.

4. DNT Phase 4B southbound frontage road (FM 428 to Collin/Grayson County Line) is assumed to open to traffic by December 31, 2020.

5. Expansion of PGBT from three lanes to four lanes per direction is assumed to be open to traffic December 31, 2019 between IH 35E and DNT, and between US 75 and SH 78. Expansion of PGBT from three lanes to four lanes per direction is assumed to be open to traffic December 31, 2020 in the section between Belt Line Road and IH 35E.

6. SH 161 between SH 183 and Belt Line Road is assumed to be expanded to eight lanes by July 1, 2021. From July 1, 2021 the two new lanes added in each direction on this facility are assumed to operate as toll free lanes.

7. By December 31, 2020, PGBT-WE mainlanes from north of Egyptian Way to IH 20 are expanded from two to three mainlanes in each direction. By January 1, 2031, PGBT-WE mainlanes from Conflans Road to north of Egyptian Way are restriped to four mainlanes in each direction and north of Egyptian Way to IH 20 is assumed to be expanded from three to four mainlanes in each direction.

8. PGBT/190 East Branch is assumed to open by January 1, 2027 as a toll facility.

9. Capacity improvements on SRT (Denton Creek to US 75) from three lanes to four lanes per direction are assumed from July 31, 2021.

10. It is assumed that construction required as part of the capacity improvements along the NTTA facilities over the next several years will cause minimal disruptions to traffic on NTTA facilities (with weekend or overnight closures of lanes/ramps).

11. Alignment of all NTTA System facilities is to be as described in Section 6 of this report.

12. Improvements to the present highway system in the vicinity of the NTTA System facilities are limited to those currently included in the Mobility 2040 Plan. No additional competing limited-access highways will be constructed near the NTTA System corridors at any time during the forecast period. Opening dates of the regional transportation projects are assumed to be consistent with the assumptions in the Mobility 2040 Plan, except as noted above.

13. No improvements to the DFW regional passenger rail network are assumed beyond those included in the Mobility 2040 Plan.

14. Fully electronic toll collection system, and toll collection policies and rates for the NTTA System will be adopted as shown in Section 6 of this report and toll rates are consistent with NTTA's current toll rate policy.

15. Toll rates on other regional toll roads are consistent with RTC's current toll policy.

16. In accordance with the existing practice of the NTTA, all NTTA System facilities will be well-maintained, efficiently operated, and effectively signed to encourage maximum usage.

17. Economic growth along NTTA System corridors will follow the forecasts described in Section 4.

18. Growth in vehicle operating costs (which include fuel, maintenance, and tires) will not significantly deviate from the assumed inflation rate.

19. No local, regional, or national emergency will arise which would abnormally restrict the use of motor vehicles.

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Section 6

Estimated Traffic and Revenue

This section presents the traffic and revenue (T&R) estimates for the North Texas Tollway Authority System (NTTA System) through 2066. The NTTA System facilities currently in operation are the Dallas North Tollway (DNT), President George Bush Turnpike (PGBT), President George Bush Turnpike Eastern Extension (PGBT EE), Sam Rayburn Tollway (SRT), Addison Airport Toll Tunnel (AATT), Mountain Creek Lake Bridge (MCLB), Lewisville Lake Toll Bridge (LLTB), President George Bush Turnpike (PGBT WE) and Chisholm Trail Parkway (CTP). The long-term T&R forecasts are based on the modeling methodologies and background assumptions described in Section 5 and other assumptions presented in this section. In addition, this section delineates the toll sensitivity analyses that were performed to estimate the revenue maximization toll rates and presents the results of various sensitivity tests to assess impacts on the T&R of key input variables. This section also provides estimated average weekday traffic for model years 2018 and 2040 and the resulting estimates of transactions and toll revenue through 2066.

TRAFFIC AND TOLL REVENUE ESTIMATION ASSUMPTIONS

The traffic forecasts and toll revenue estimates for NTTA System facilities are predicated on the following assumptions, which are consistent with observed trends and are considered reasonable for the purposes of this study:

Toll Rate Assumptions

DNT and PGBT

- Automatic Vehicle Identification (AVI) toll for two-axle vehicles: $0.1801/mile starting July 1, 2017 with adjustments every two years at 2.75 percent per year.
- Video toll surcharge is the maximum of, a) 50 percent of the AVI rate or b) $0.20 per transaction on July 1, 2009 inflated by 2.75 percent per year.
- Minimum toll charge is based on a trip length of 1.5 miles.
- Tolls charged to users are rounded to the next highest penny.

PGBT EE

- AVI toll for two-axle vehicles: $0.1801/mile on July 1, 2017 with adjustments every two years at 2.75 percent per year. This is the "unified toll", which is the publicly announced toll, as defined in the PGBT EE Project Agreement between NTTA and the Texas Department of Transportation (TxDOT). The ratio between the NTTA toll and the unified toll remains constant at 80 percent.
- Video toll surcharge is the maximum of, a) 50 percent of the AVI rate or b) $0.20 per transaction on July 1, 2009 inflated by 2.75 percent per year. This portion of the video toll constitutes the property and revenues of the NTTA only, and not of TxDOT.
- Minimum toll charge is based on a trip length of 1.5 miles.
- Tolls charged to users are rounded to the next highest penny.

SRT and PGBT WE

- AVI maximum base toll (MBT) for two-axle vehicles: $0.180/mile starting July 1, 2017 with adjustments every two years at 2.75 percent per year.
- Video toll surcharge is the maximum of, a) 50 percent of the AVI rate or b) $0.20 per transaction on July 1, 2009 inflated by 2.75 percent per year.
- Minimum toll charge is based on a trip length of 1.5 miles.
- Tolls charged to users are rounded to the next highest penny.
- MBT rounded to $0.001/mile.

CTP

- Automatic Vehicle Identification (AVI) toll for two-axle vehicles: $0.2298/mile (IH 30 to Altamesa) and $0.1801/mile (Altamesa to US 67) starting July 1, 2017 with adjustments every two years at 2.75 percent per year.
- Video toll surcharge is the maximum of, a) 50 percent of the AVI rate or b) $0.20 per transaction on July 1, 2009 inflated by 2.75 percent per year.
- Minimum toll charge is based on a trip length of 1.5 miles.
- Tolls charged to users are rounded to the next highest penny.

AATT and MCLB:

- AVI toll for two-axle vehicles: $0.63 starting July 1, 2017 with adjustments every two years at 2.75 percent per year.
- Video toll surcharge is 50 percent of the AVI rate.
- Tolls charged to users are rounded to the next highest penny.

LLTB:

- AVI toll for two-axle vehicles: $1.25 starting July 1, 2017 with adjustments every two years at 2.75 percent per year.
- Video toll surcharge is 50 percent of the AVI rate.
- Tolls charged to users are rounded to the next highest penny.

Truck Traffic Shares/Truck Toll Assumptions

Truck traffic (vehicles with greater than two axles) shares are applied on a gantry by gantry basis and averages assumed for each facility are shown in Table 6-1 below:

Table 6-1. Truck Shares

Facility	Truck Share (%)	Facility	Truck Share (%)
DNT	1.7	MCLB	2.2
PGBT	3.1	LLTB	3.4
SRT	3.8	PGBT WE	5.8
PGBT EE	3.2	CTP	3.1
AATT	1.0	NTTA System	3.0

Tolls for vehicles with more than two axles are calculated based on “N-1” weighting, where “N” is the number of axles. For example, the toll paid by a five-axle vehicle would be four times the toll paid by a two-axle vehicle. Average truck toll factor is a ratio of the weighted average of the truck tolls charged to

vehicles with greater than two-axles to the tolls charged to two-axle vehicles. For example, a high truck toll factor would mean a higher proportion of higher axle vehicles on a toll facility. The average truck toll factor assumed for various facilities on the NTTA System are shown in Table 6-2.

Table 6-2. Truck Toll Factor

Facility	Truck Toll Factor	Facility	Truck Toll Factor
DNT	3.02	MCLB	3.39
PGBT	3.21	LLTB	2.98
SRT	3.26	PGBT WE	3.31
PGBT EE	3.11	CTP	3.31
AATT	2.88	NTTA System	3.21

AVI/ZipCash Transaction Shares

AVI transaction shares are applied on a gantry by gantry basis and averages assumed in 2017 for each facility are shown below in Table 6-3.

Table 6-3. AVI Share

NTTA Facility	AVI Share (%)	NTTA Facility	AVI Share (%)
DNT	80.3	MCLB	60.1
PGBT	78.0	LLTB	77.7
PGBT EE	78.6	PGBT WE	70.0
SRT	80.5	CTP	78.3
AATT	78.0	NTTA System	78.6

The above AVI transaction shares also include all transactions initially recorded as ZipCash transactions that may be later identified and reclassified as AVI transactions. These transactions are called "VToll" transactions. AVI transaction shares are assumed to follow a logistic function, asymptotically increasing to an NTTA System average maximum of 85 percent.

Annual Revenue Days

"Annual revenue days" is a parameter used in the revenue estimation to convert the weekday transactions/revenue to annual transactions/revenue. Observed ratios of the weekend to weekday traffic on NTTA System facilities are used to estimate the annual revenue days. Annual revenue days are applied on a gantry by gantry basis and averages for each facility are shown below in Table 6-4.

Table 6-4. Annual Revenue Days

NTTA Facility	Annual Revenue Days	NTTA Facility	Annual Revenue Days
DNT	334	MCLB	340
PGBT	327	LLTB	340
PGBT EE	335	PGBT WE	320
SRT	339	CTP	325
AATT	309	NTTA System	333

Revenue Recovery Assumptions

The revenue recovery rate for AVI transactions/revenue was assumed to be 99.5 percent for all years. The table below describes the assumptions used for ZipCash transactions/revenue recovery. These assumptions are for ZipCash transactions and exclude VTolls, which are transactions captured by the ZipCash system whose license plate numbers are later matched to active transponder accounts. These

recovery assumptions have been developed based on guidance from the NTTA staff regarding the NTTA's goals with respect the unpursuable and uncollectable ZipCash transactions.

Table 6-5. ZipCash Assumptions

NTTA System ZipCash Assumptions (excluding VTolls)	2017
ZipCash Revenue Recovered (After 3 months)	24.0%
ZipCash Revenue Recovered (After 12 months)	36.0%
ZipCash Revenue Recovered (After 24 months)	40.0%

Traffic Growth Assumptions Beyond 2040

Between 2041 and 2045, traffic is estimated to increase at an average annual rate equivalent to that projected between 2037 and 2040. Annual traffic growth rates from 2046 onwards are shown in Table 6-6.

Table 6-6. Annual Traffic Growth Rate Assumptions (2046 Onwards)

Year	Facility/ Segment	Annual Growth Rate (%)
2046-2050	DNT Phase 3 (SRT to US 380)	1.0
	DNT (South of SRT)	0.5
	PGBT	1.0
	PGBT EE	1.0
	AATT	0.2
	MCLB	0.4
	LLTB	1.5
	SRT	1.5
	PGBT WE	1.0
	CTP	1.5
Beyond 2051	DNT Phase 3 (SRT to US 380)	1.0
	DNT (South of SRT)	0.5
	PGBT (Belt Line to DNT, US 75 to SH 78)	1.0
	PGBT (US 75 to DNT)	0.5
	PGBT EE	1.0
	AATT	0.2
	MCLB	0.4
	LLTB	1.0
	SRT	1.3
	PGBT WE	1.0
	CTP	1.0

NTTA TOLL COLLECTION CONCEPT AND TOLL STRUCTURE

As described in Section 2, the NTTA System currently utilizes a mixed toll collection system that includes AVI and video tolling (known as "ZipCash"). Under ZipCash, users without transponders are identified through the license plate number and invoiced for the toll charge incurred. The ZipCash patrons are charged more than AVI customers per transaction. A majority of the VToll transactions are charged the AVI rate, however, NTTA charges ZipCash rates for certain VToll transactions to recover the additional collection costs of VToll transactions and to discourage customer behavior related causes of VToll transactions. Tolls are collected at fixed tolling points at rates determined generally upon the influence distance using a per mile toll rate. Toll rates for ZipCash transactions are 50 percent higher than the rates for AVI transactions (with a minimum differential of $0.25 in 2017 dollars). Figures 6-1 through 6-12 show the 2017 and 2040 AVI and ZipCash rates charged at the toll gantries on all NTTA facilities.

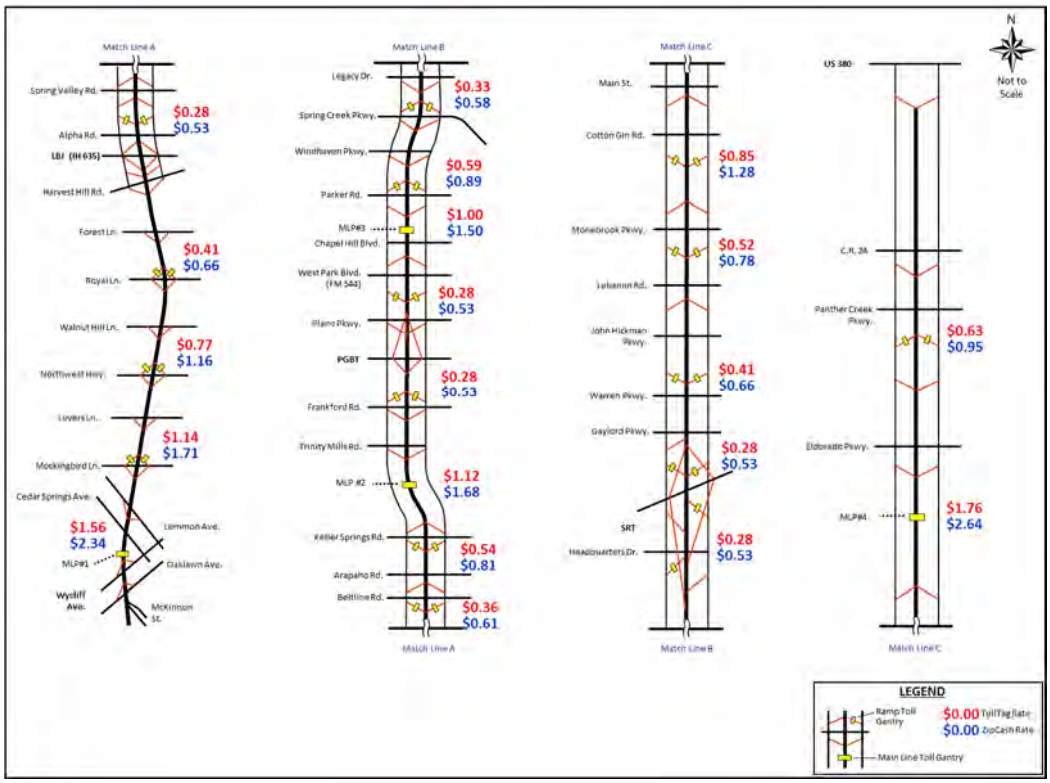

Figure 6-1.
2017 DNT Toll Configuration and Rates

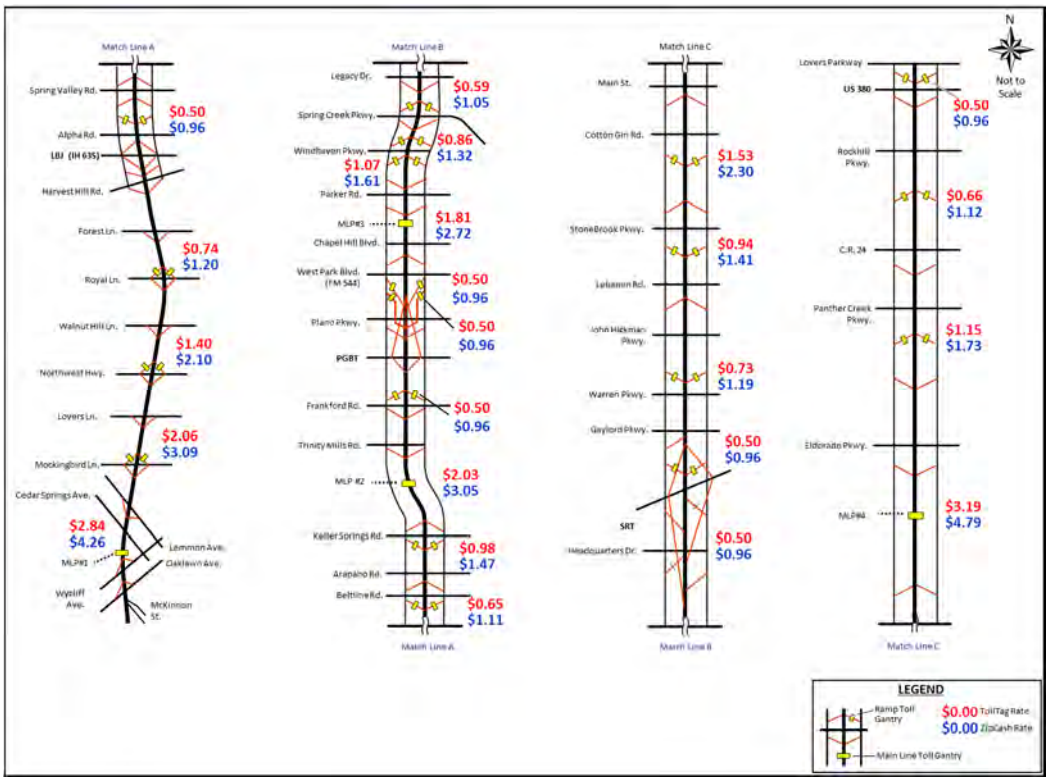

Figure 6-2.
2040 DNT Toll Configuration and Rates

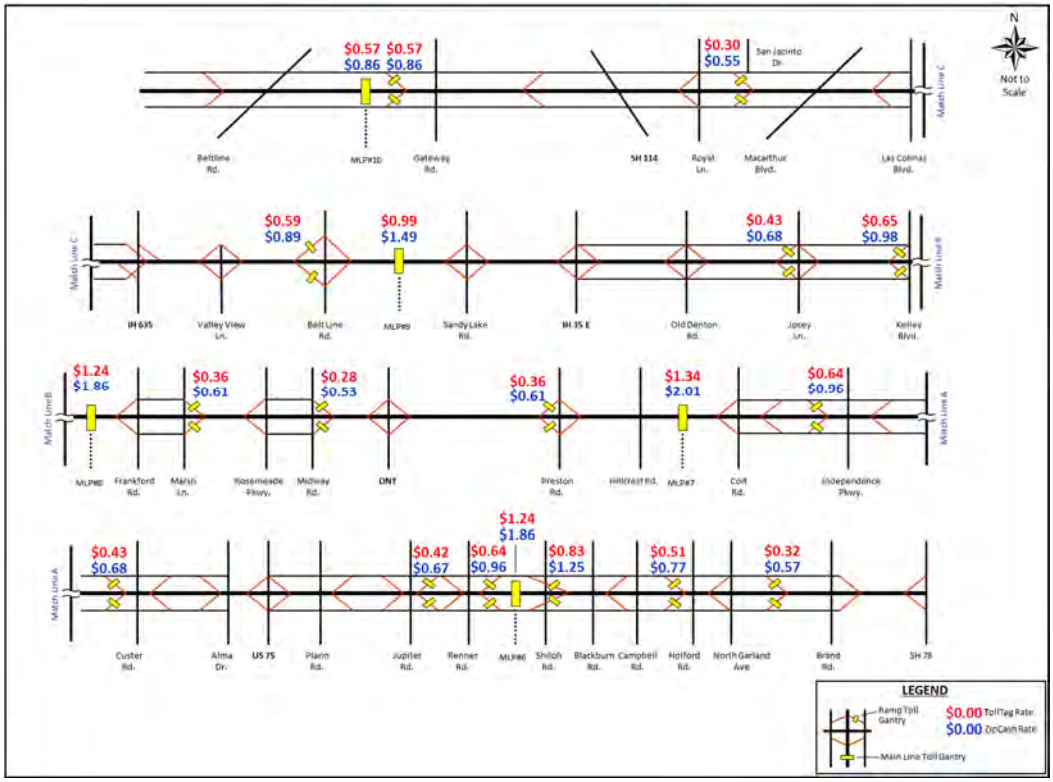

Figure 6-3.
2017 PGBT Toll Configuration and Rates

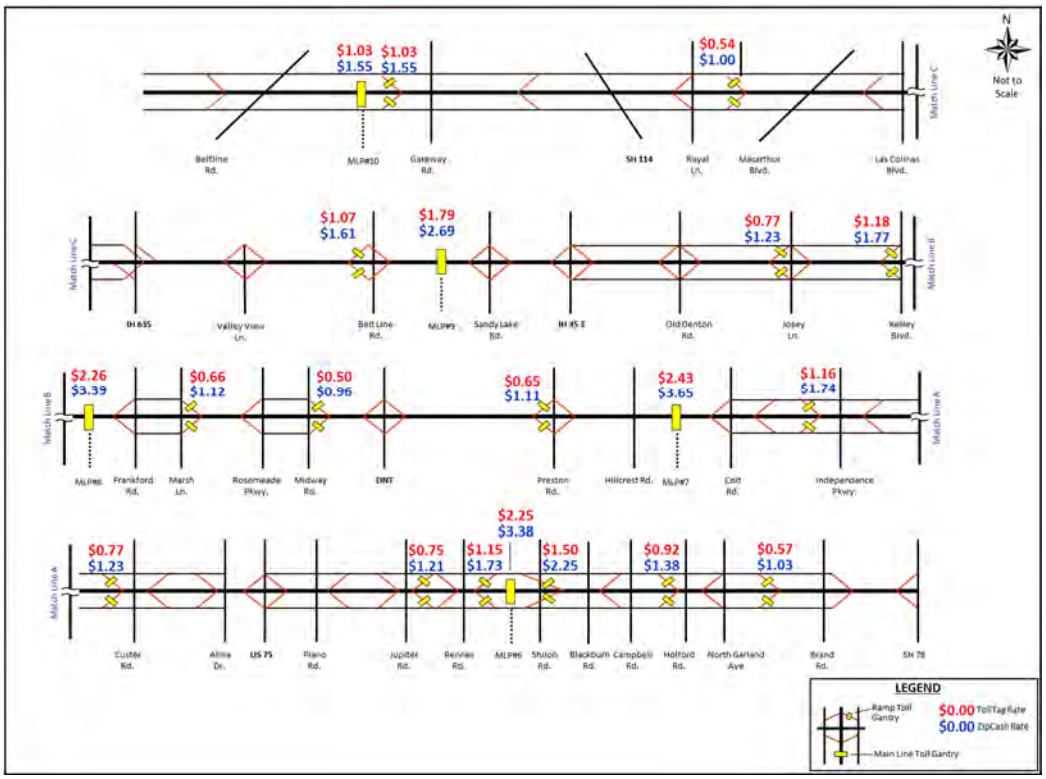

Figure 6-4.
2040 PGBT Toll Configuration and Rates

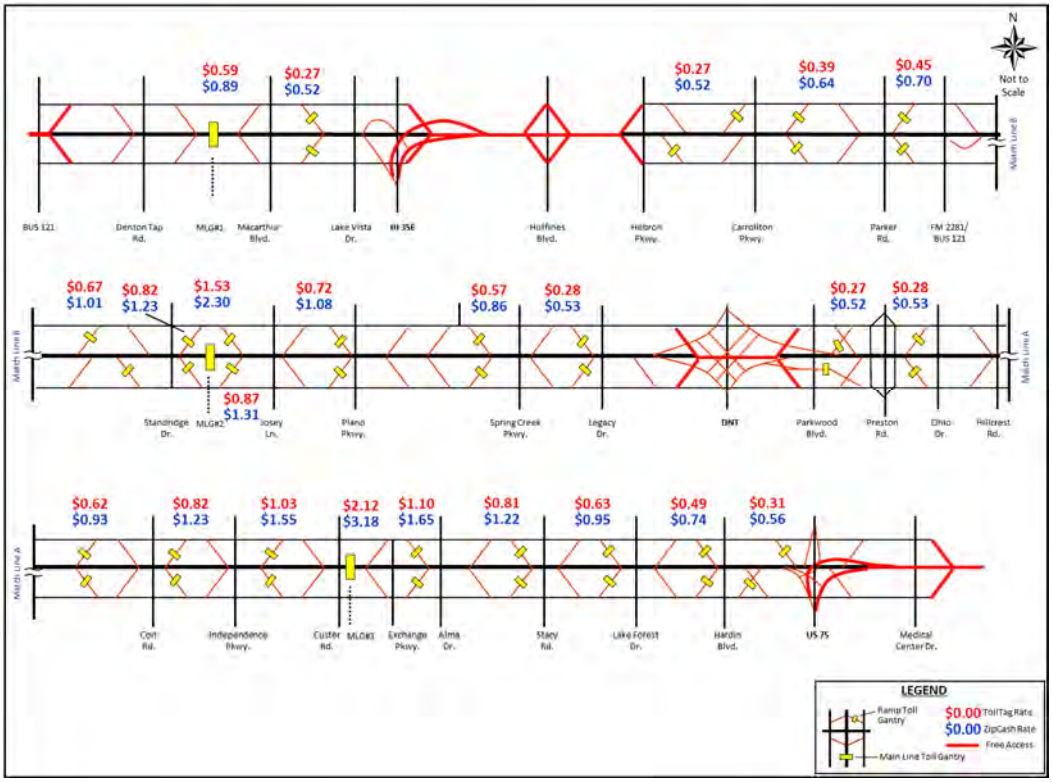

Figure 6-5.
2017 SRT Toll Configuration and Rates

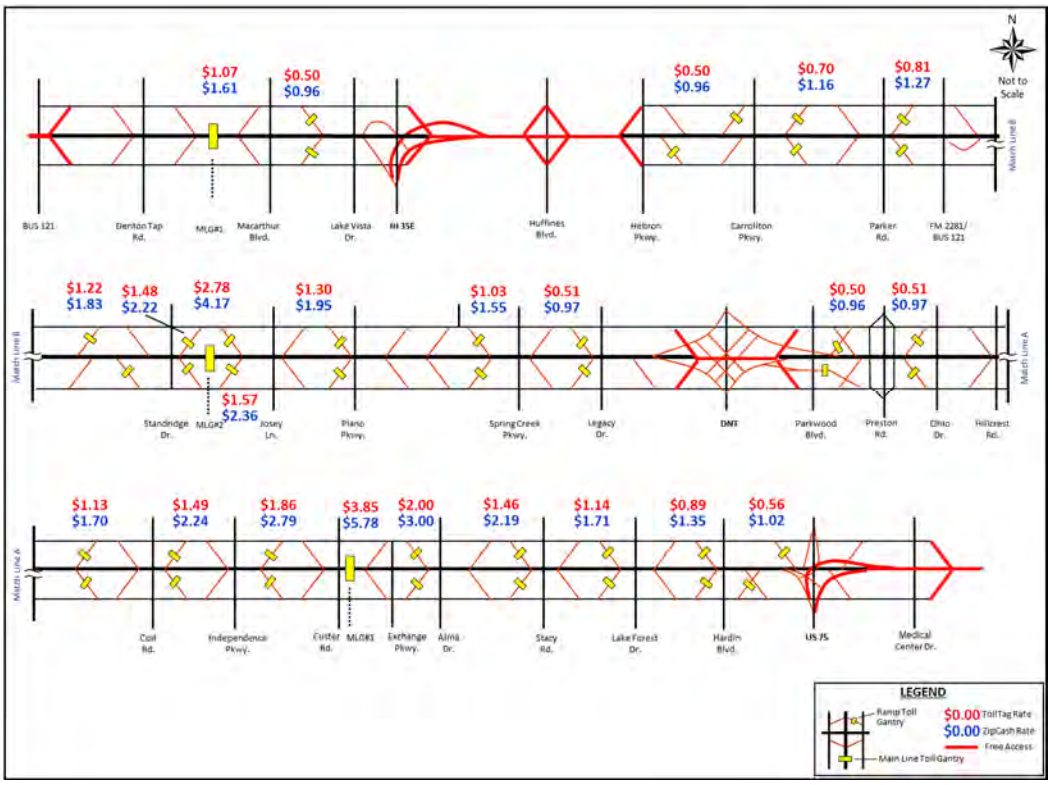

Figure 6-6.
2040 SRT Toll Configuration and Rates

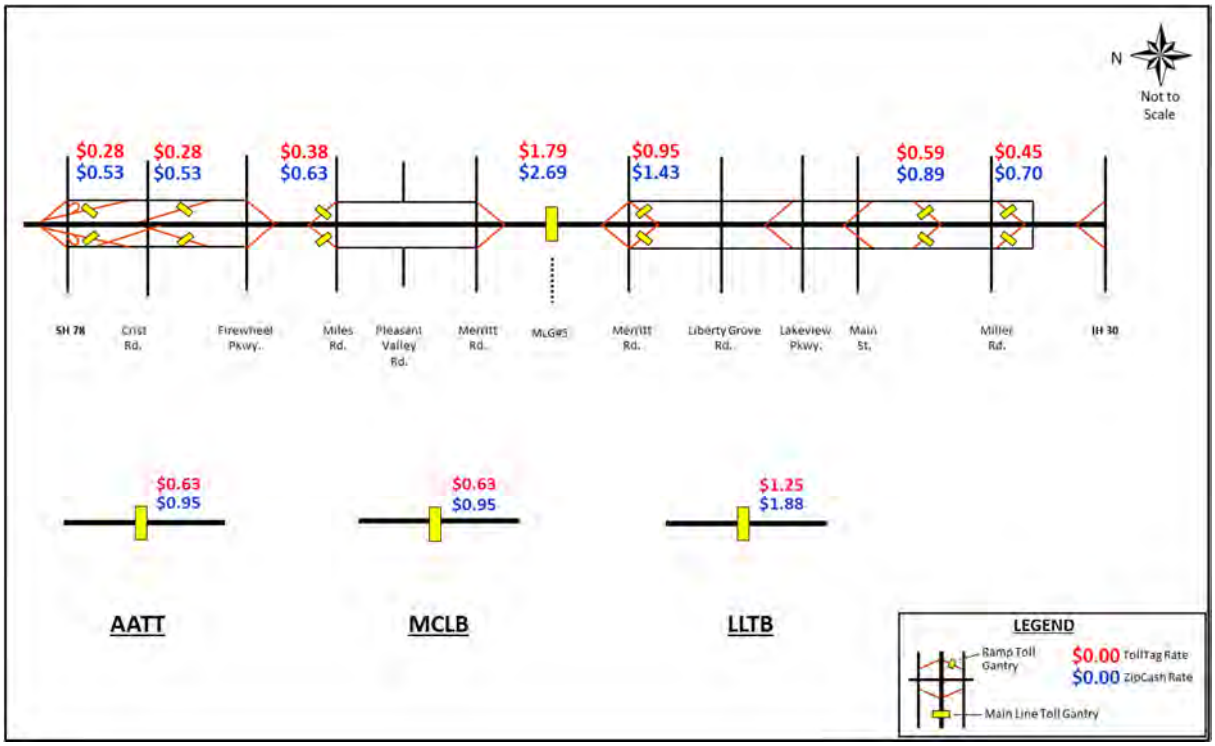

Figure 6-7.
2017 PGBT EE, AATT, MCLB and LLTB Toll Configuration and Rates

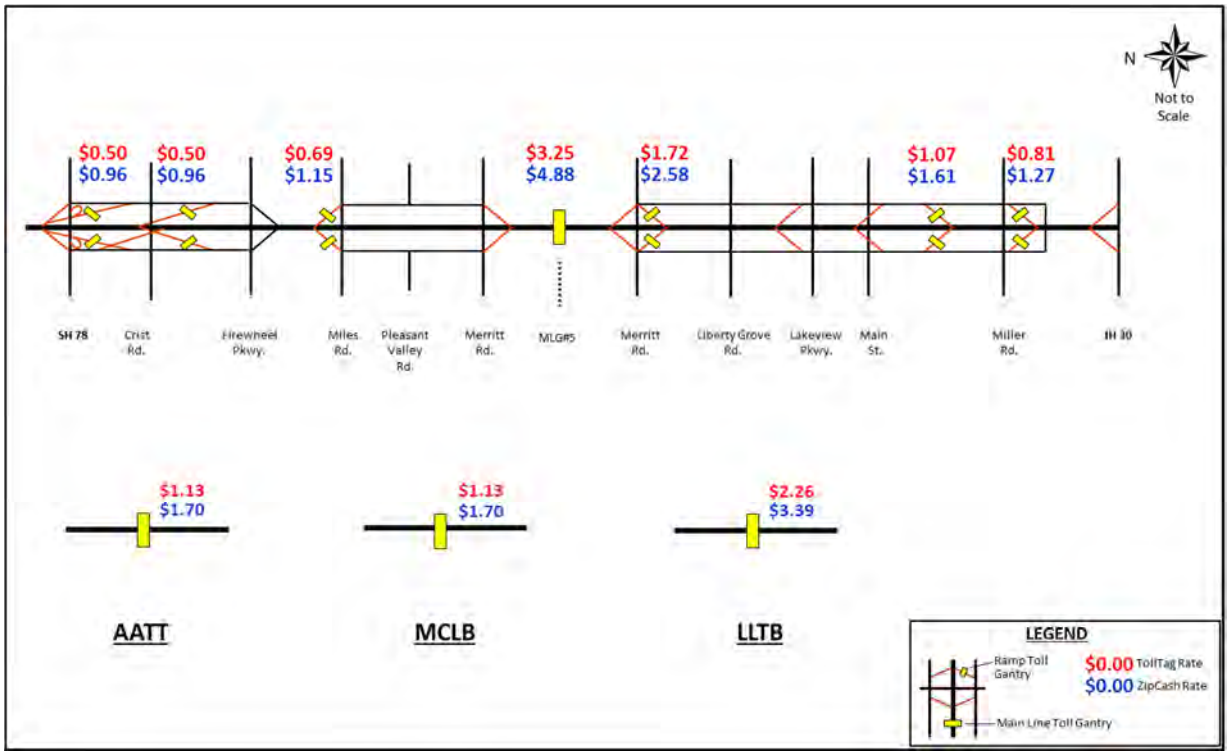

Figure 6-8.
2040 PGBT EE, AATT, MCLB and LLTB Toll Configuration and Rates

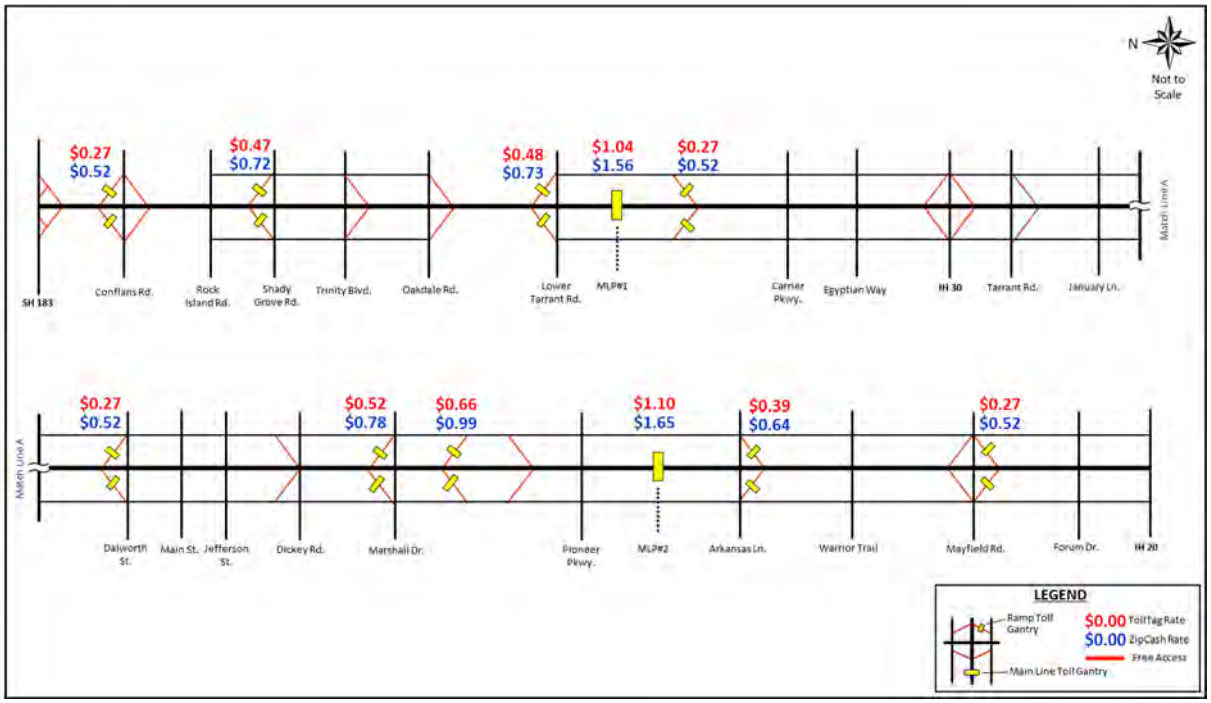

Figure 6-9.
2017 PGBT WE Toll Configuration and Rates

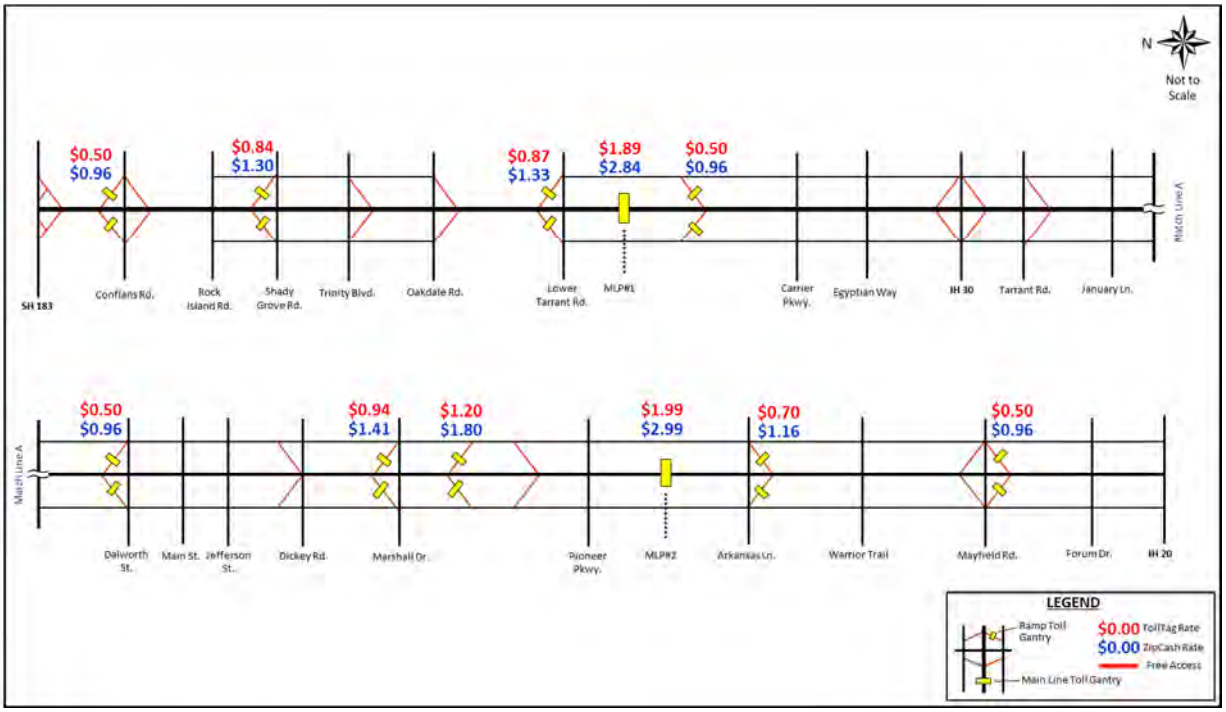

Figure 6-10.
2040 PGBT WE Toll Configuration and Rates

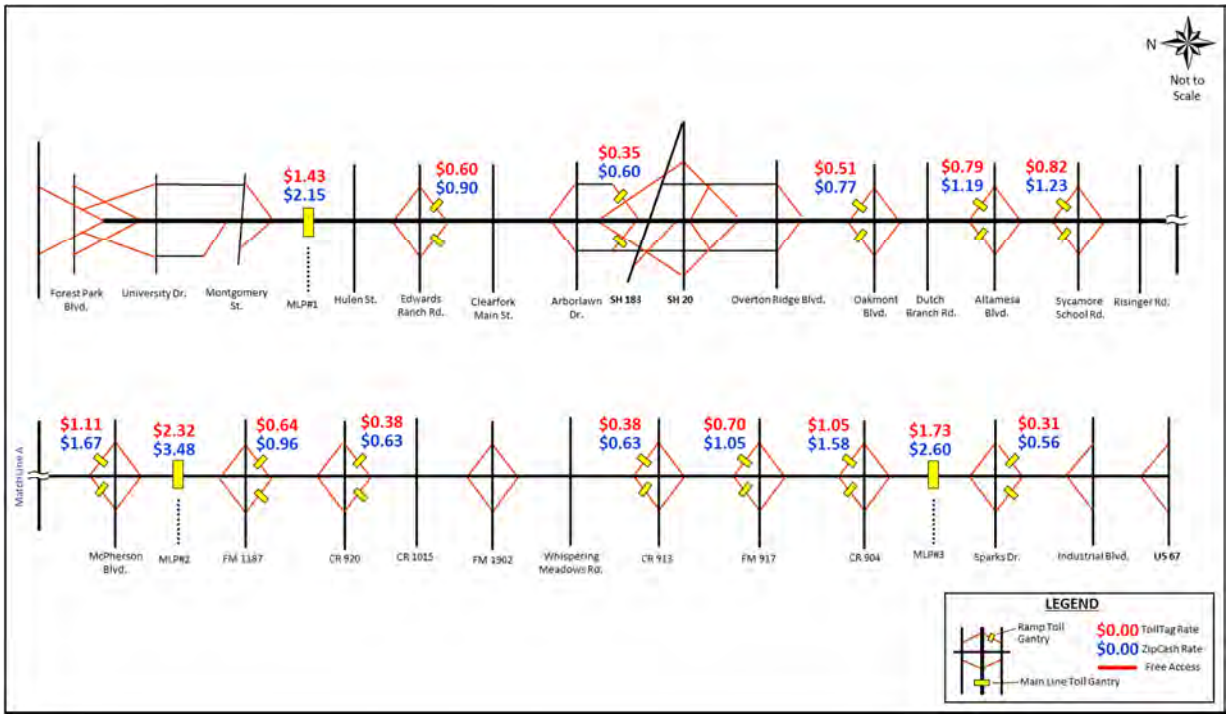

Figure 6-11.
2017 CTP Toll Configuration and Rates

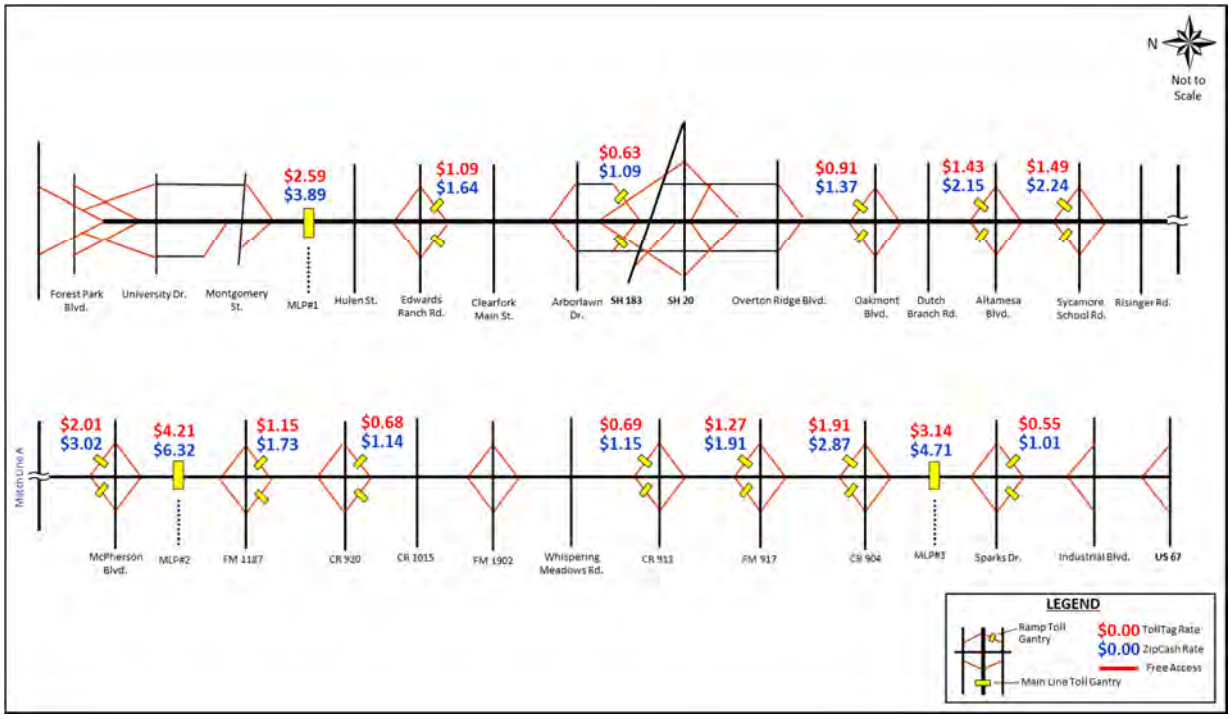

Figure 6-12.
2040 CTP Toll Configuration and Rates

TOLL SENSITIVITY ANALYSIS

The toll sensitivity analysis was performed to test the impacts of changes to toll rates on the transactions and revenue from each of the NTTA System facilities and the NTTA System as a whole. It is advisable that the proposed toll rates on the NTTA System facilities be less than that required to maximize revenue as determined by the toll sensitivity analysis. Future flexibility should be maintained to increase tolls, if necessary, to generate additional revenue. Future year toll sensitivity curves are based on changes in traffic characteristics along the NTTA System such as congestion levels, values of time and attractiveness of competing facilities. These curves are essential in estimating the viability of future toll rate increases. In general, the toll sensitivity curve suggests that when the toll rate increases, a portion of travelers will leave the toll facility and choose other routes. Therefore, as toll rate increases, transactions decrease. However, as the toll rate increases, the toll revenue increases until it reaches the highest revenue point where an additional toll rate increment would reduce transactions enough to result in decreased toll revenue.

Toll sensitivity analyses were conducted for the NTTA System for the years 2017, 2027 and 2040. Figures 6-13 through 6-19 illustrate the daily toll sensitivity curves for the DNT, PGBT, SRT, PGBT EE, PGBT WE, CTP and NTTA System as a whole. The curves were developed using the revised trip tables that incorporate base year calibration related adjustments, as described in Section 5, using toll rates ranging between $0.10 per mile and $0.50 per mile. The planned average two-axle vehicle AVI toll rates are included on each of the toll sensitivity curves for reference. The results indicate that the planned toll rates are below the revenue maximization points, demonstrating that, if needed, there is potential for revenue enhancement through toll increases above those assumed for traffic and revenue forecasting purposes.

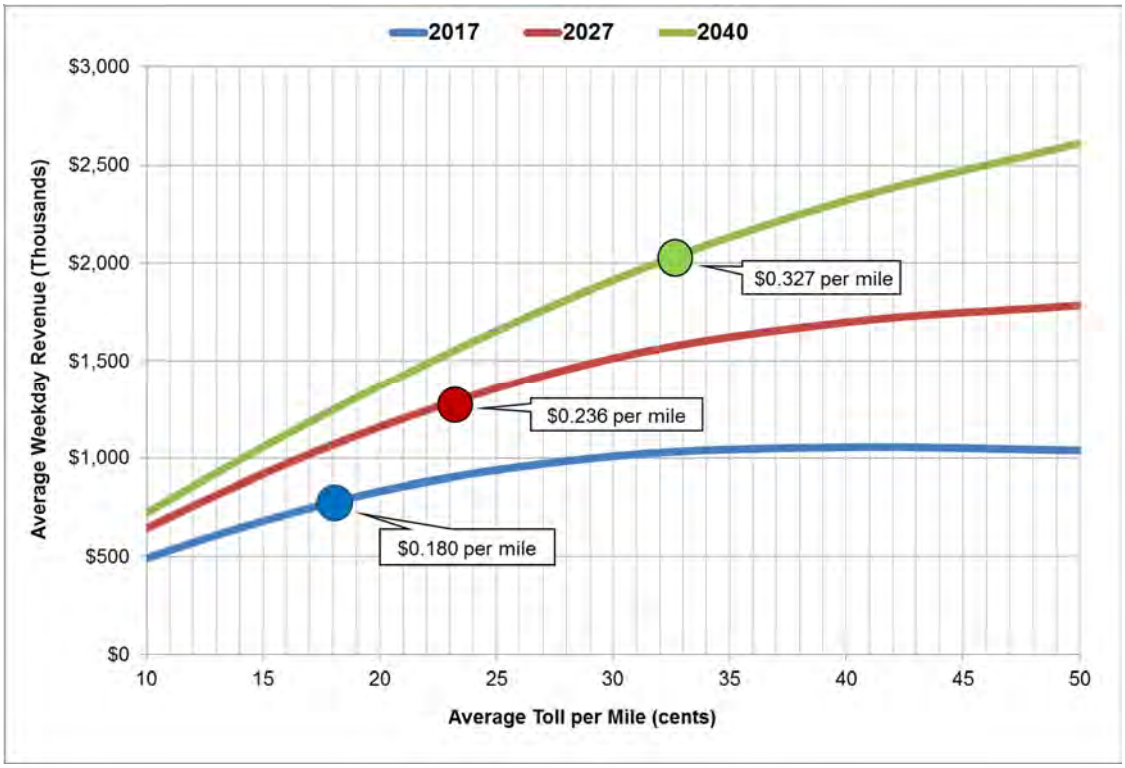

Figure 6-13.
Toll Sensitivity Curves – DNT

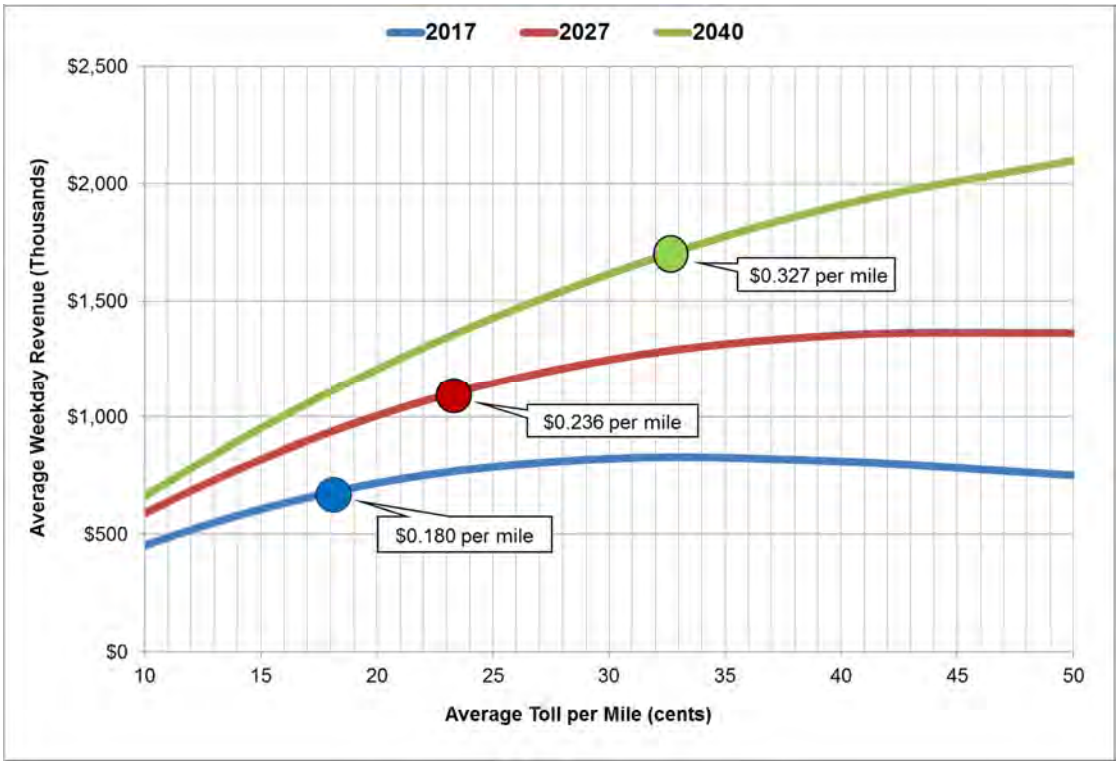

Figure 6-14.
Toll Sensitivity Curves – PGBT

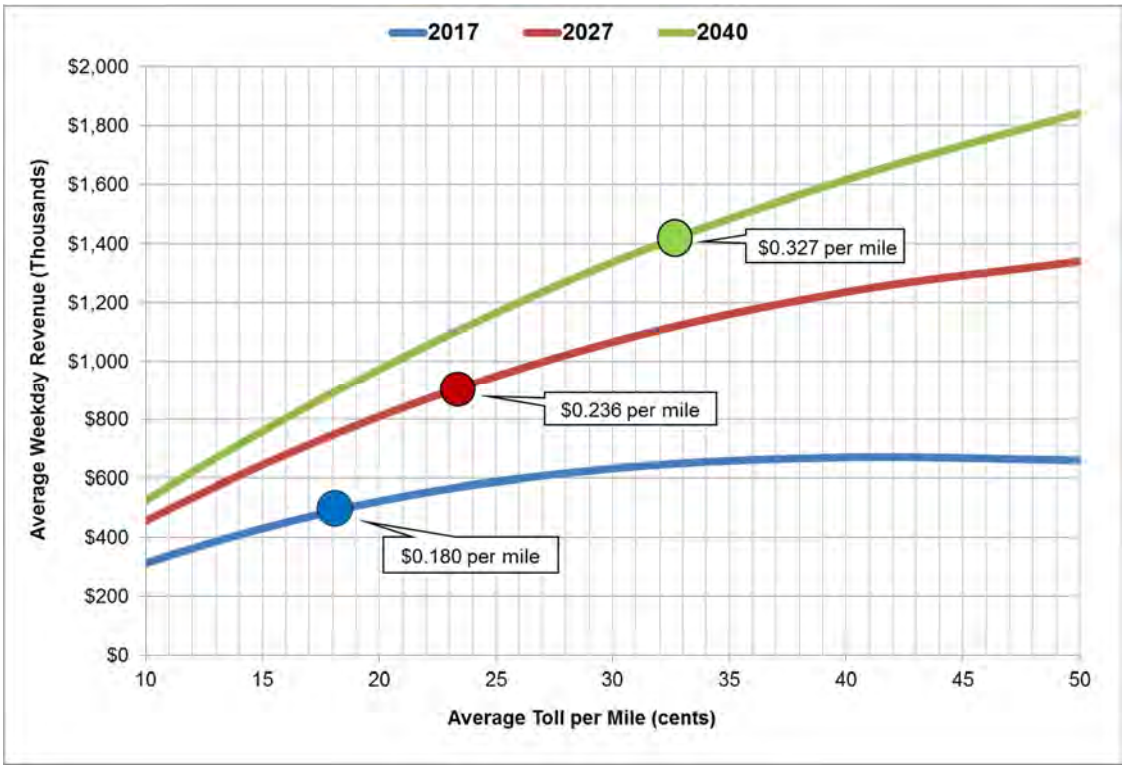

Figure 6-15.
Toll Sensitivity Curves – SRT

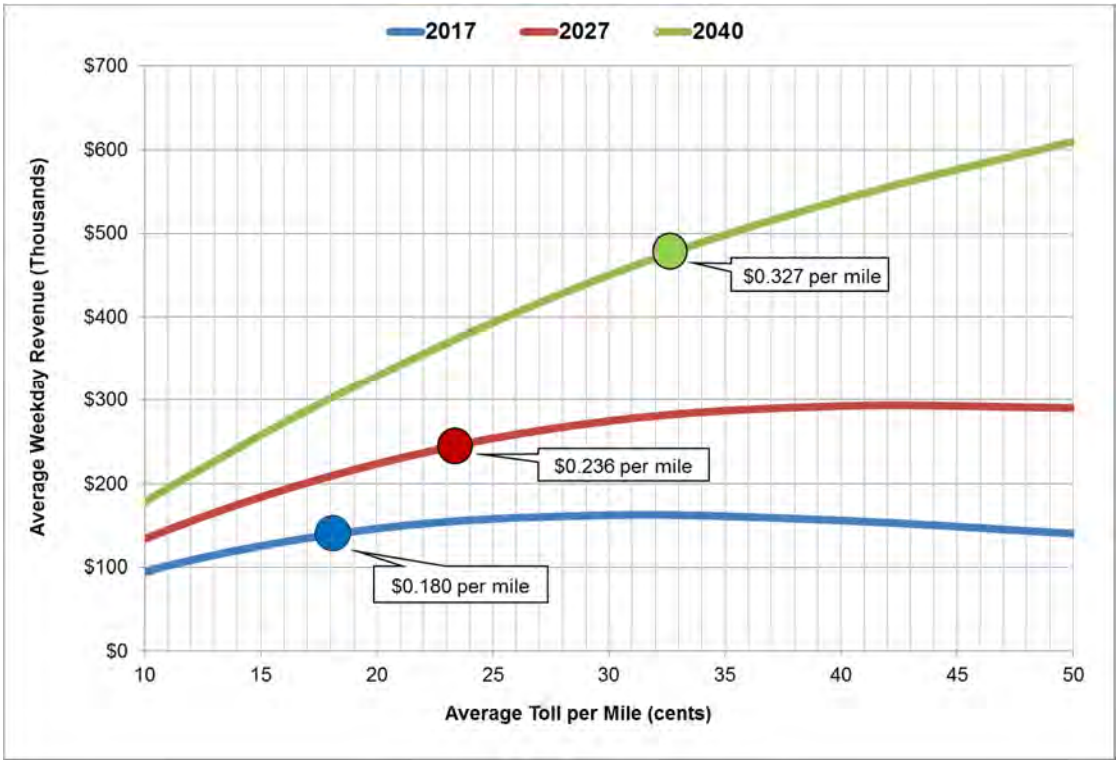

Figure 6-16.
Toll Sensitivity Curves – PGBT EE

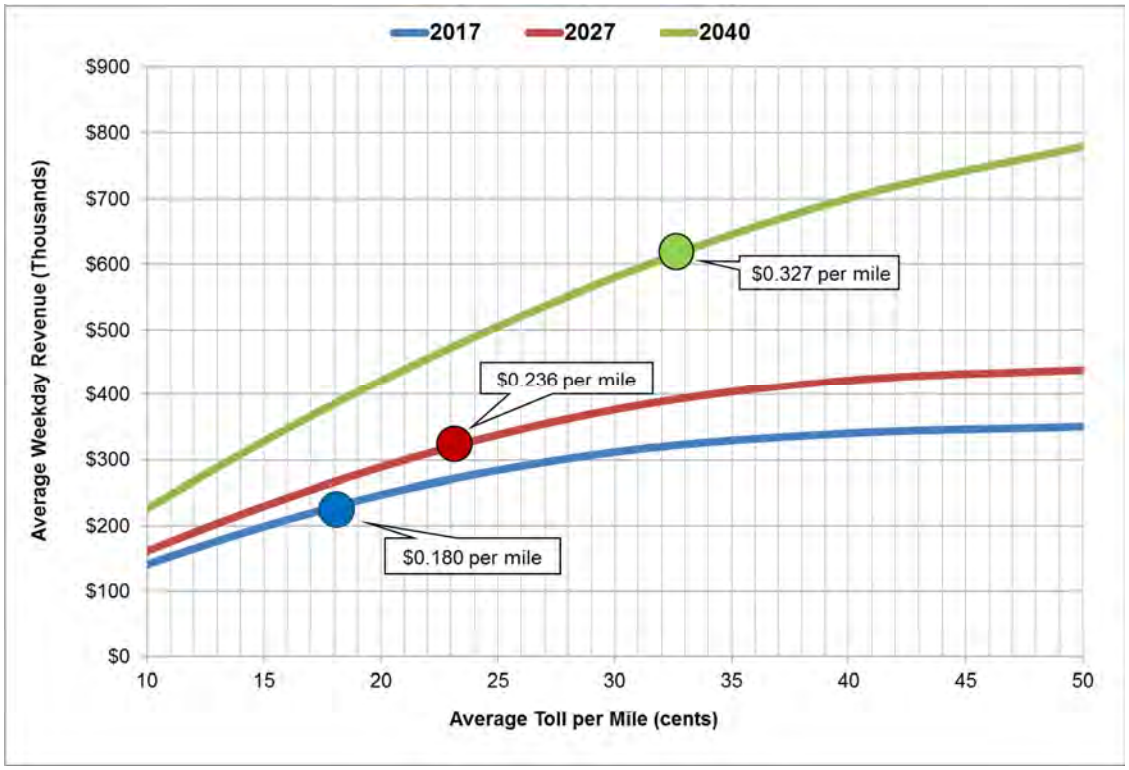

Figure 6-17.
Toll Sensitivity Curves – PGBT WE

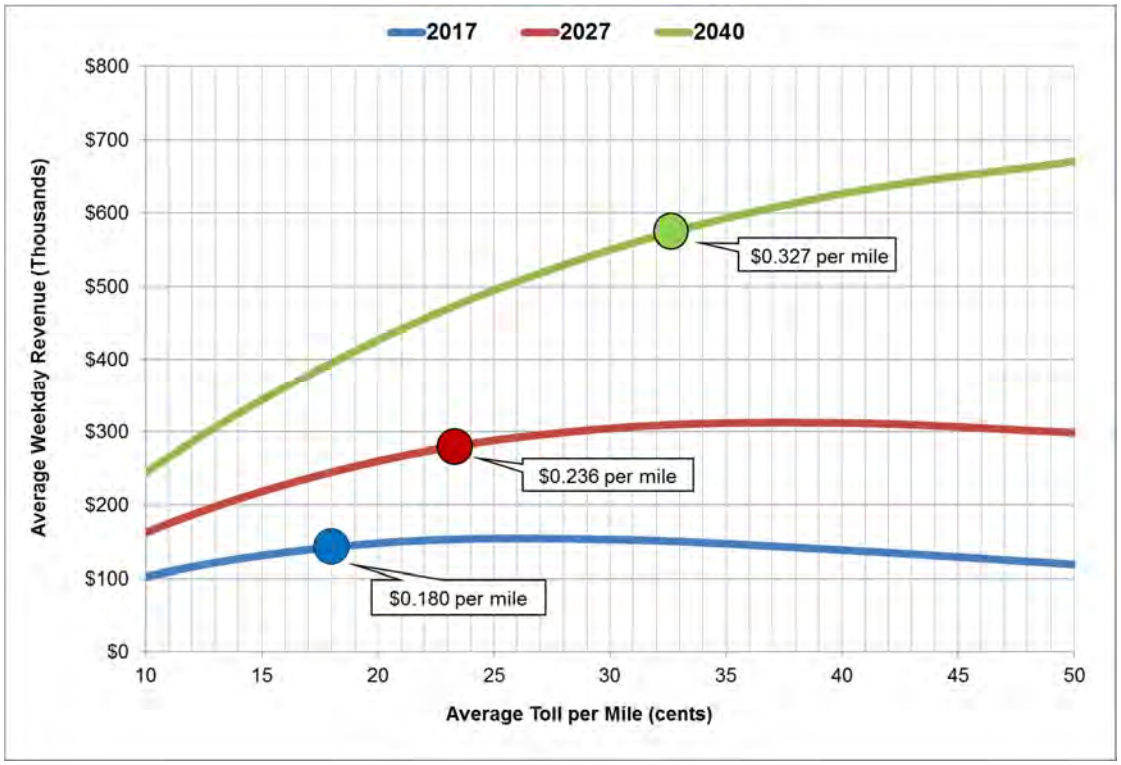

Figure 6-18.
Toll Sensitivity Curves – CTP

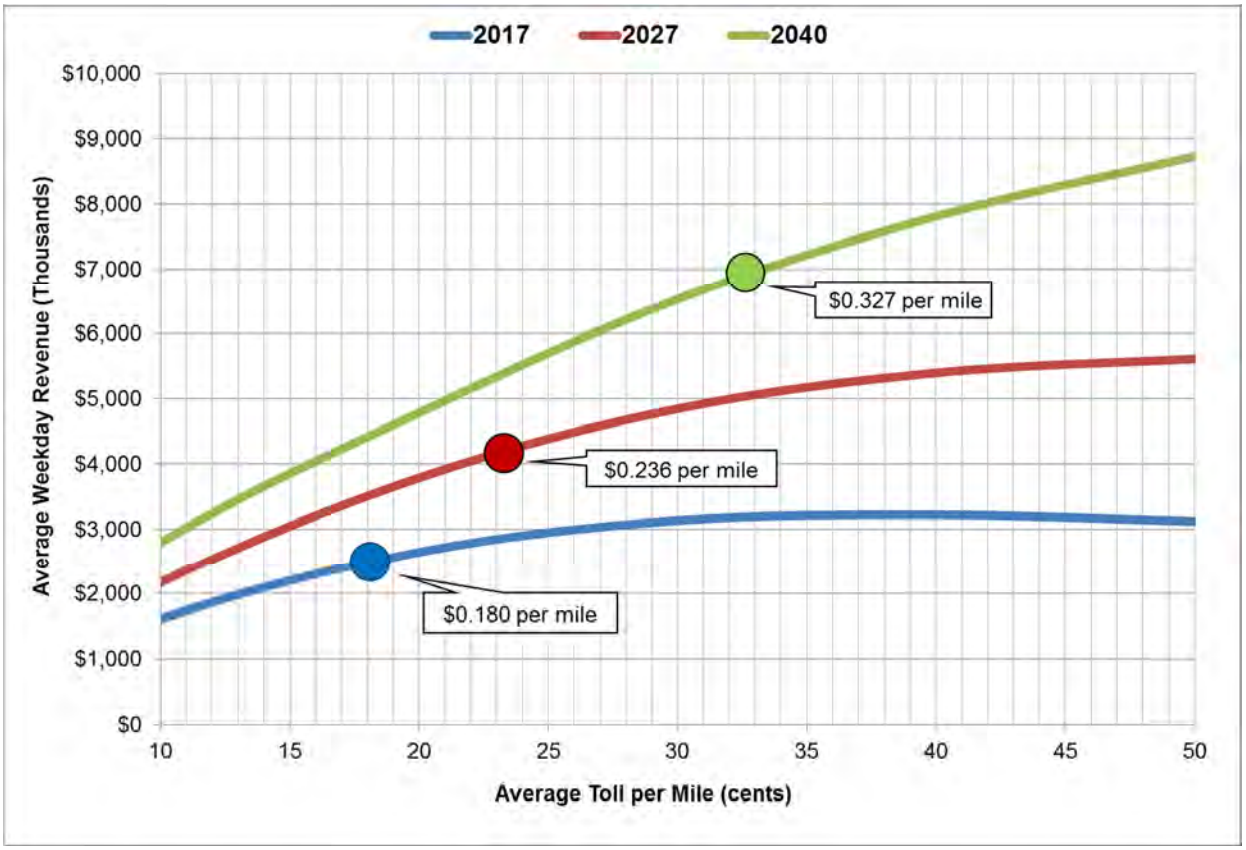

Figure 6-19.
Toll Sensitivity Curves – NTTA System

ESTIMATED AVERAGE WEEKDAY TRAFFIC

An equilibrium diversion technique was used to carry out traffic assignment runs for three periods, AM peak, PM peak, and off-peak. The model runs were conducted for the years 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2027, 2031, 2037 and 2040. Traffic volumes were estimated by using the revised demographics trip tables, which were adjusted based on the base year model validation process, as described in Section 5.

As the NTTA System currently employs an AVI/ZipCash toll collection system, two separate traffic assignments, one with AVI toll charges and the other with ZipCash charges, were conducted for each model year. The traffic volumes obtained by the AVI toll charge assignment were factored by the assumed AVI transaction shares to get the AVI volumes and the traffic volumes obtained by the ZipCash toll charge assignment run were factored by the ZipCash transaction shares to get the ZipCash traffic volume. The sum of the AVI and ZipCash volumes provided the total traffic using the NTTA System. In this manner volume totals on the NTTA System facilities were estimated for each model year. All other years were interpolated or extrapolated between or beyond the modeled years to obtain the yearly traffic and revenue estimates.

The traffic assignment results at each of the analysis years were reviewed for reasonableness and post-model adjustments were made as necessary. This included adjustments to reflect model validation results along the NTTA System corridors. Figures 6-20 through 6-25 illustrate average 2018 and 2040 weekday volumes on each of the NTTA System facilities.

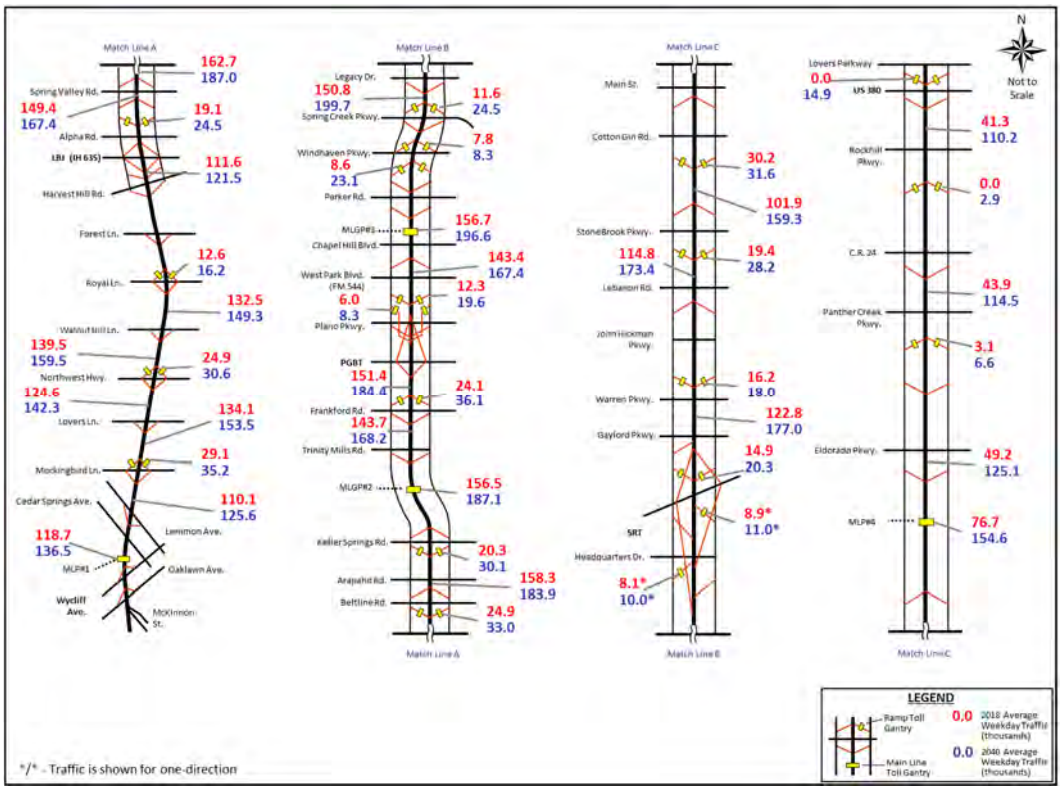

Figure 6-20.
Estimated 2018 and 2040 Average Weekday Traffic Volumes – DNT

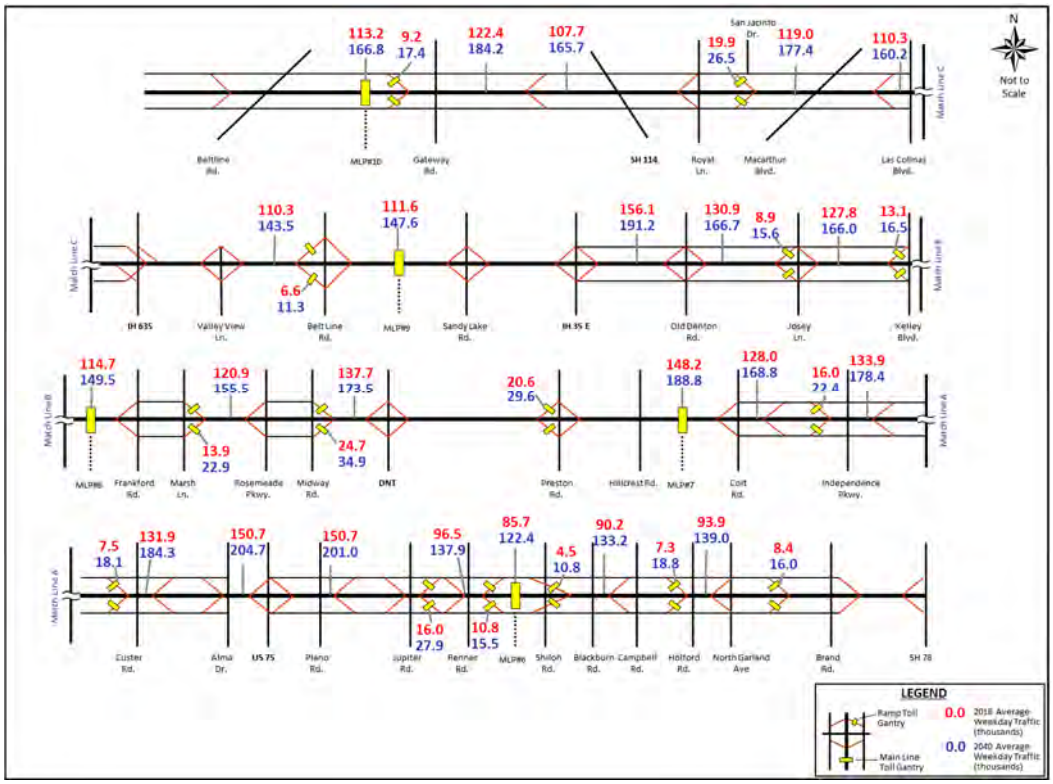

Figure 6-21.
Estimated 2018 and 2040 Average Weekday Traffic Volumes – PGBT

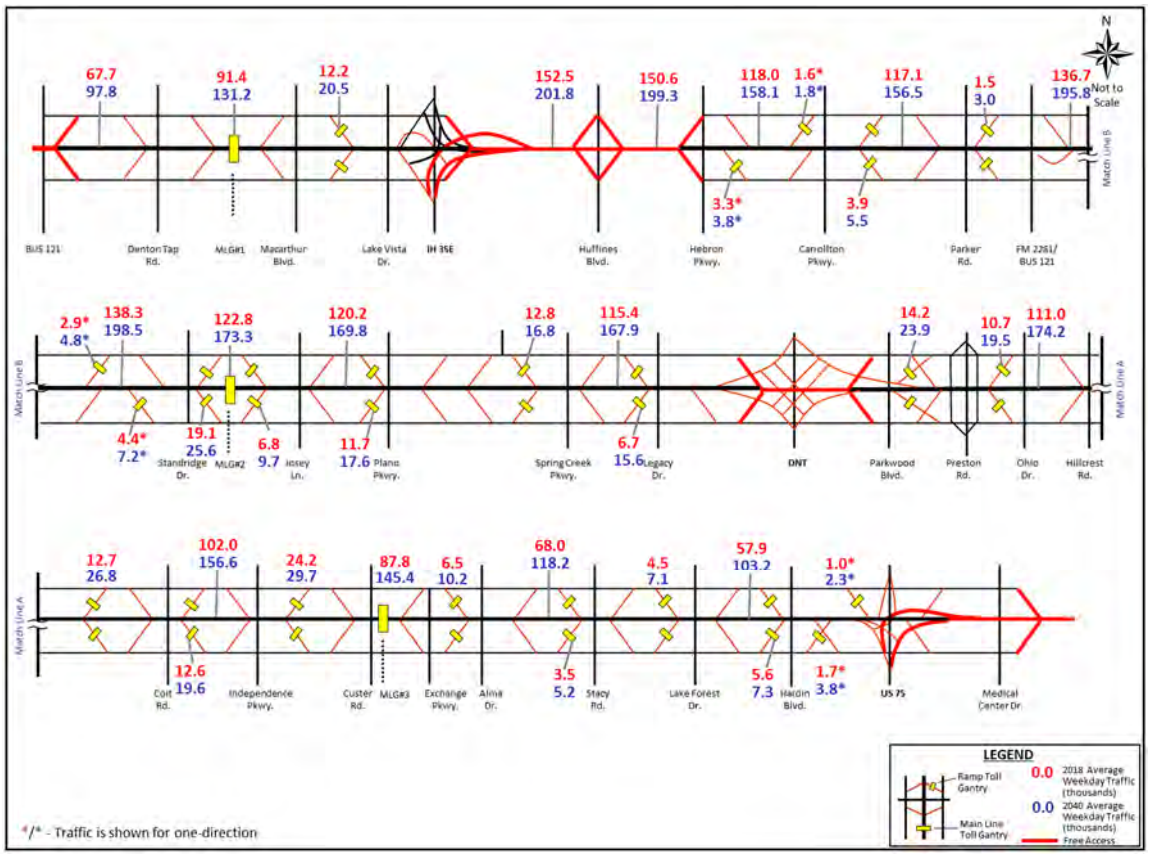

Figure 6-22.
Estimated 2018 and 2040 Average Weekday Traffic Volumes – SRT

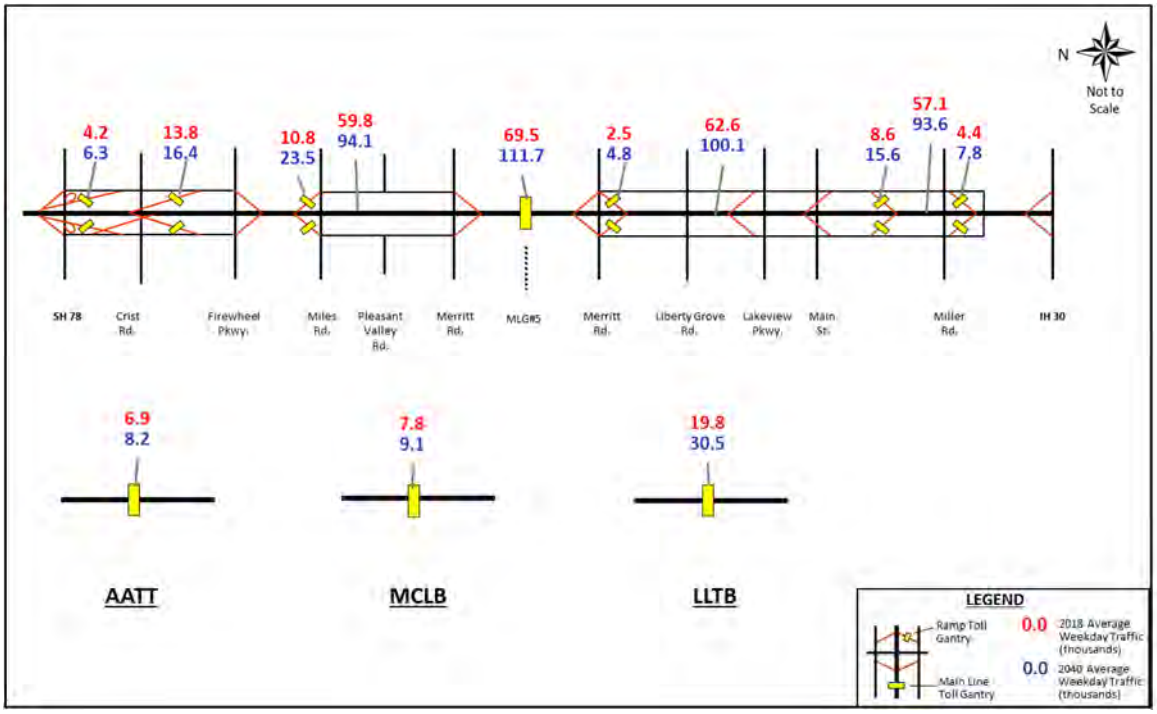

Figure 6-23.
Estimated 2018 and 2040 Average Weekday Traffic Volumes – PGBT EE, AATT, MCLB and LLTB

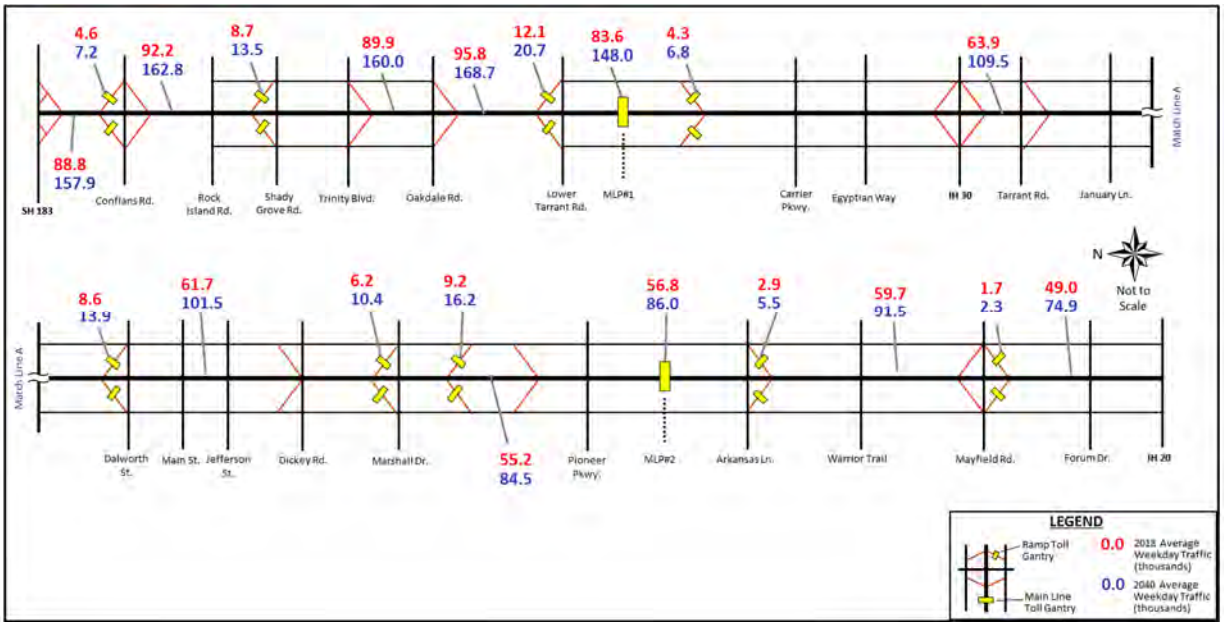

Figure 6-24.
Estimated 2018 and 2040 Average Weekday Traffic Volumes – PGBT WE

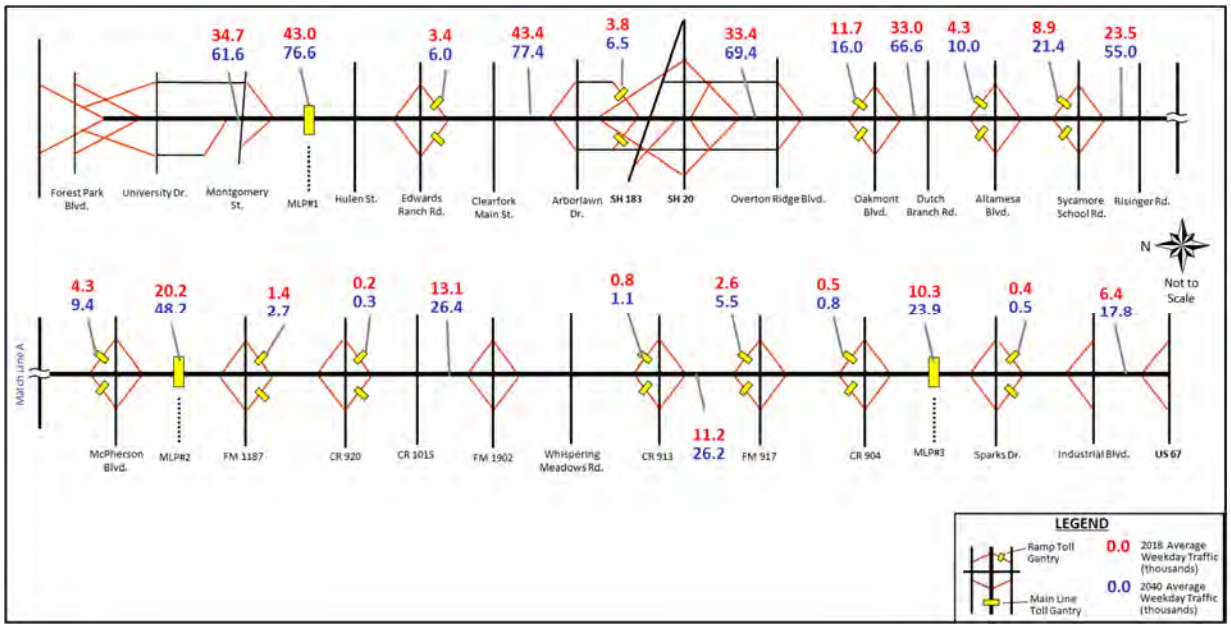

Figure 6-25.
Estimated 2018 and 2040 Average Weekday Traffic Volumes – CTP

ESTIMATED ANNUAL NTTA SYSTEM TOLL REVENUE

Based on the traffic forecast at each toll gantry location, annual forecasts for each facility of the NTTA System were prepared through 2066. The projections extend from 2017 through 2066 and include the revenue forecasts for DNT, PGBT, AATT, MCLB, LLTB, PGBT EE, SRT, PGBT WE and CTP. In each case, forecasts for each of the facilities are based on modeled traffic estimates at each toll collection location, through the year 2040. These modeled estimates were refined, using post-model adjustments, reflecting validation factors used to match observed 2017 traffic data at each toll gantry location.

The average toll at each location was based on the current mix of passenger car and commercial vehicle traffic and the current average tolls, modified in future years to reflect changing assumptions in the proportion of AVI and ZipCash transaction shares. Toll rates for ZipCash transactions are 50 percent higher than the rates for AVI transactions (with a minimum differential of $0.25 in 2017 dollars) in each case, as noted previously.

Estimates beyond year 2040 are based on nominal assumptions regarding future traffic growth as shown in Table 6-6, with assumed toll rate increases as noted previously. As shown in Table 6-7, the estimated annual revenue on the DNT is expected to increase from $247.9 million in 2017 to $364.8 million by 2025 and $545.5 million by 2035. Revenue on the PGBT is expected to be $221.0 million in 2017, increasing to $320.6 million by 2025 and $481.7 million by 2035. Revenue on the SRT is expected to be $177.8 million in 2017, increasing to $268.0 million by 2025 and $424.4 million by 2035. As 2058 is the end of the fifty-year operational agreement of the SRT between NTTA and TxDOT, revenue from SRT is estimated through August 31, 2058, while the other facilities are assumed to generate revenue for NTTA in perpetuity. The PGBT EE toll revenue shown is the NTTA's share of the toll revenue. Under the PGBT EE project agreement with TxDOT, NTTA keeps 80 percent of the revenue generated by the PGBT EE, and the remaining 20 percent is paid to TxDOT. NTTA's share of the revenue on the PGBT EE is expected to be $36.9 million in 2017, increasing to $57.0 million by 2025 and $93.2 million by 2035. Together, the DNT, PGBT and SRT account for the majority of revenue generated by the NTTA System.

The estimated annual revenue on PGBT WE is expected to increase from $56.1 million in 2017 to $96.2 million by 2025 and $151.9 million by 2035. Revenue on the CTP is expected to be $44.9 million in 2017, increasing to $82.9 million by 2025 and $149.9 million by 2035. Revenue from the AATT, MCLB and LLTB are expected to be about $10.3 million, combined, in 2017. By 2025 this is estimated to reach a combined $15.5 million, still a very small share of total NTTA System revenue.

Total revenue on the existing NTTA System, is expected to increase from about $795.0 million in 2017 to $1.20 billion in 2025 and $1.87 billion in 2035. Driven by nominal traffic growth and continued assumed modest inflationary adjustments in toll rates, revenue on the NTTA System is expected to reach more than $3 billion per year by 2047.

Future traffic growth on the NTTA System facilities is constrained to reflect available capacity, although the widening of DNT from north of Belt Line to SRT and the widening of PGBT from six to eight lanes between SH 78 and north of Belt Line Road are assumed, and the widening of the mainlanes of SRT from six to eight lanes is also assumed.

Table 6-7. NTTA System Estimated Annual Toll Revenue (millions)

Year	DNT	PGBT	SRT	PGBT EE*	PGBT WE	CTP	AATT-MCLB-LLTB	NTTA System
2017	$247.89	$221.02	$177.85	$36.91	$56.12	$44.94	$10.31	$795.03
2018	$263.37	$230.88	$189.03	$38.75	$59.03	$50.99	$11.14	$843.19
2019	$276.56	$239.59	$198.05	$40.73	$62.95	$56.25	$11.76	$885.90
2020	$289.98	$251.12	$207.28	$43.05	$66.58	$60.17	$12.38	$930.56
2021	$303.71	$263.93	$217.19	$45.58	$73.36	$64.08	$12.95	$980.80
2022	$320.21	$277.63	$230.10	$48.27	$81.32	$68.34	$13.56	$1,039.44
2023	$334.83	$290.93	$242.15	$50.99	$86.61	$72.87	$14.19	$1,092.58
2024	$350.33	$305.21	$254.75	$53.88	$91.03	$77.76	$14.88	$1,147.84
2025	$364.82	$320.56	$268.00	$57.01	$96.22	$82.93	$15.55	$1,205.08
2026	$381.92	$337.24	$282.07	$60.33	$101.03	$88.48	$16.27	$1,267.35
2027	$397.50	$350.67	$294.97	$63.54	$102.63	$93.82	$16.95	$1,320.08
2028	$414.19	$364.80	$308.40	$66.65	$107.38	$99.48	$17.68	$1,378.58
2029	$430.41	$379.32	$322.45	$69.90	$113.37	$105.50	$18.49	$1,439.43
2030	$447.89	$395.00	$337.32	$73.33	$119.09	$111.95	$19.38	$1,503.97
2031	$465.83	$410.59	$353.04	$76.97	$126.84	$118.63	$20.18	$1,572.09
2032	$485.17	$427.28	$369.59	$80.80	$132.27	$125.75	$21.03	$1,641.91
2033	$504.17	$444.50	$386.94	$84.72	$138.90	$133.34	$21.94	$1,714.51
2034	$524.54	$462.84	$405.15	$88.79	$145.02	$141.43	$22.92	$1,790.69
2035	$545.50	$481.71	$424.38	$93.24	$151.95	$149.88	$23.94	$1,870.60
2036	$568.04	$501.96	$444.57	$97.92	$158.35	$158.91	$25.05	$1,954.80
2037	$590.90	$520.89	$463.94	$102.61	$165.72	$170.57	$26.12	$2,040.76
2038	$612.38	$540.73	$484.13	$106.92	$172.58	$180.37	$27.26	$2,124.38
2039	$634.22	$561.12	$504.99	$111.35	$180.65	$190.59	$28.46	$2,211.38
2040	$657.42	$582.71	$526.63	$115.91	$188.12	$201.38	$29.73	$2,301.90
2041	$679.99	$604.15	$549.63	$120.71	$196.82	$212.25	$31.07	$2,394.62
2042	$703.91	$626.92	$573.71	$125.69	$204.91	$223.72	$32.51	$2,491.36
2043	$728.43	$650.23	$599.67	$130.92	$214.81	$236.03	$33.91	$2,593.99
2044	$754.70	$675.16	$626.90	$136.34	$224.10	$249.10	$35.39	$2,701.69
2045	$781.03	$700.51	$653.75	$142.10	$234.51	$262.57	$36.93	$2,811.40
2046	$807.80	$727.49	$681.32	$147.64	$242.77	$274.01	$38.47	$2,919.50
2047	$834.49	$754.66	$710.79	$153.23	$252.80	$285.80	$40.05	$3,031.82
2048	$862.84	$783.47	$741.56	$158.97	$261.93	$298.12	$41.73	$3,148.62
2049	$891.12	$813.12	$773.38	$165.01	$272.04	$310.71	$43.37	$3,268.74
2050	$921.18	$844.78	$806.59	$171.24	$281.20	$323.97	$45.10	$3,394.06
2051	$950.63	$875.29	$839.15	$177.75	$292.52	$336.11	$46.79	$3,518.24
2052	$979.87	$907.38	$872.78	$184.42	$302.93	$348.75	$48.58	$3,644.72
2053	$1,009.50	$939.65	$909.16	$191.44	$315.26	$361.94	$50.30	$3,777.24
2054	$1,041.06	$973.95	$947.09	$198.68	$326.49	$375.75	$52.12	$3,915.14
2055	$1,071.99	$1,008.91	$984.95	$206.35	$339.69	$389.88	$54.07	$4,055.85
2056	$1,104.95	$1,046.17	$1,024.22	$214.24	$351.73	$404.68	$56.15	$4,202.14
2057	$1,137.77	$1,083.52	$1,065.72	$222.36	$365.76	$419.96	$58.14	$4,353.21
2058	$1,172.67	$1,123.44	$737.55	$230.78	$378.63	$436.07	$60.23	$4,139.37
2059	$1,207.91	$1,163.85	$0.00	$239.45	$394.15	$452.28	$62.47	$3,520.12
2060	$1,246.43	$1,207.79	$0.00	$248.61	$408.31	$469.23	$64.90	$3,645.27
2061	$1,284.54	$1,252.67	$0.00	$258.38	$424.44	$487.08	$67.27	$3,774.39
2062	$1,321.18	$1,296.42	$0.00	$267.55	$439.07	$505.76	$69.56	$3,899.54
2063	$1,360.48	$1,342.94	$0.00	$277.70	$456.59	$524.60	$72.10	$4,034.41
2064	$1,402.39	$1,392.25	$0.00	$288.16	$472.71	$544.38	$74.80	$4,174.69
2065	$1,443.84	$1,442.23	$0.00	$299.23	$491.95	$564.87	$77.51	$4,319.62
2066	$1,487.90	$1,495.29	$0.00	$310.61	$509.46	$586.30	$80.37	$4,469.93

* - PGBT EE toll revenue shown in the Table is the NTTA's share of the toll revenue

Table 6-8 shows the projected annual transaction and revenue growth rates on the NTTA System. Annual transaction and revenue growth rates from 2017 through 2020 are equal to 2.4 percent and 5.4 percent, respectively. The transaction growth during this period captures the demographic growth, continued traffic ramp-up on PGBT WE and CTP, and the impact of capacity improvements along sections of the DNT and PGBT that are implemented in the 2018-2020 time-frame. Revenue growth during this period includes traffic growth and toll rate growth. Annual transaction and revenue growth rates from 2020 through 2030 are equal to 2.1 percent and 4.9 percent, respectively. During this period, the growth in transactions is driven mainly by the growth in the demographics along the NTTA System corridors, the assumed opening of East Branch toll road that connects to the south end of PGBT EE in 2027, the assumed opening of DNT Phase 4A in 2023 and the assumed expansion of the PGBT, SRT and PGBT-WE mainlanes in 2021.

The transaction growth rates progressively decrease to 1.5 percent between 2030 and 2040, and to 1.1 percent between 2040 and 2050. The corresponding growth rates in revenue are 4.3 percent and 4.0 percent, respectively, which incorporate the traffic growth and the assumed toll rate increases.

Table 6-8. NTTA System Transactions and Revenue Annual Growth

Period	Annual Transaction Growth (%)	Annual Revenue Growth (%)
2017-2020	2.4	5.4
2020-2030	2.1	4.9
2030-2040	1.5	4.3
2040-2050	1.1	4.0

Figure 6-26 graphically displays the annual revenue forecasts shown previously in Table 6-7 by facility. It is expected that the DNT, PGBT and SRT will continue to generate the vast majority of revenue on the NTTA System throughout the forecast period. The DNT will provide about 31 percent of all NTTA System revenue in 2018; this proportion decreases to 29 percent in 2040 as the SRT and CTP continue to mature. The PGBT (including EE and WE) will provide approximately 40 percent of all NTTA System revenue through 2040. The SRT will provide about 22 percent of all NTTA System revenue in 2018; this proportion increases to 23 percent in 2040. The AATT, MCLB, and LLTB will contribute less than two percent of revenue through 2040. This is still a relatively small share and demonstrates the importance of the DNT, PGBT, SRT and CTP to the NTTA System revenue and mobility in the region.

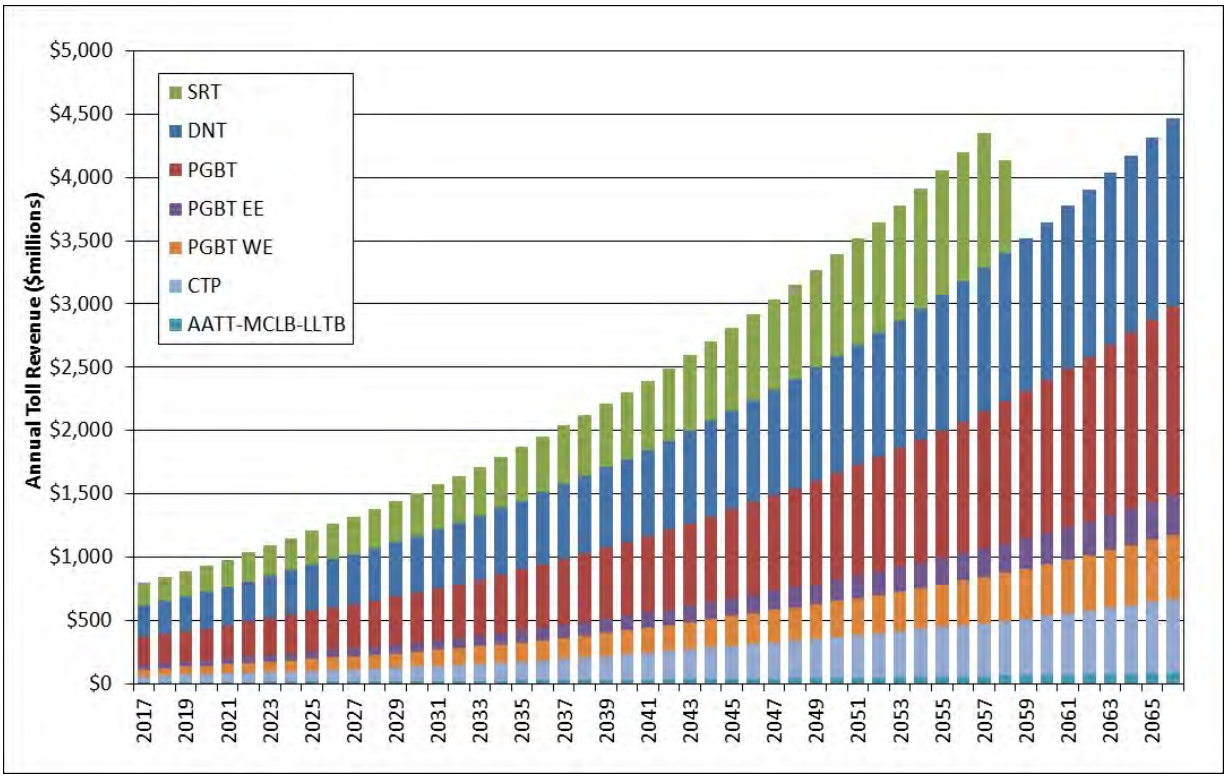

Figure 6-26.
NTTA System Estimated Annual Revenue by Facility

SENSITIVITY TESTS OF KEY INPUT VARIABLES

The base case forecasts for the NTTA System shown above are based on several assumptions, as described previously. As any forecast of the future is subject to considerable uncertainty, most traffic and revenue forecasts to be used in support of project financing typically include sensitivity tests. In general, these are intended to provide a general measure of the potential impact on the revenue forecasts associated with hypothetical changes in certain basic assumptions. These sensitivity tests provide a comparison with the previously presented base case toll revenue forecasts. Each sensitivity test is described in more detail below.

Impacts of Value of Time

Values of time (VOT) assumed to produce the traffic and revenue forecast on the NTTA System are shown in Table 5-2. Three alternative scenarios with low VOT, high VOT and VOT inflated at two percent were created to test the sensitivity of the traffic and revenue forecasts to the VOT. The first two alternative VOTs were created by assuming a 15 percent decrease and increase for the low and high VOT scenarios, respectively. The scenarios were tested for years 2017 and 2040, and the traffic forecast and revenue comparison is shown in Table 6-9.

As shown in Table 6-9, for a 15 percent decrease in VOT in year 2017, revenue is expected to decrease by approximately 6.7 percent and transactions are expected to drop by 6.2 percent. In 2040, using a 15 percent decrease in VOT, revenue is expected to drop by 5.8 percent and transactions will decrease by 5.5 percent. In 2017, using a 15 percent increase in VOT, revenue is expected to increase by 5.5 percent and transactions will increase by 5.2 percent. In 2040, using a 15 percent increase in VOT, transactions and revenue are expected to increase by 4.3 and 4.1 percent, respectively.

Table 6-9. Impacts of Value of Time

Year	Revenue			Revenue Index		
	Base VOT	0.85 VOT	1.15 VOT	Base VOT	0.85 VOT	1.15 VOT
2017	$795,034,300	$741,979,100	$839,046,400	100.0	93.3	105.5
2040	$2,301,903,000	$2,168,941,200	$2,401,268,800	100.0	94.2	104.3
Year	**Transactions**			**Transactions Index**		
	Base VOT	**0.85 VOT**	**1.15 VOT**	**Base VOT**	**0.85 VOT**	**1.15 VOT**
2017	807,526,600	757,122,100	849,335,500	100.0	93.8	105.2
2040	1,227,591,500	1,159,956,300	1,277,365,000	100.0	94.5	104.1

Impacts of Severe Demographic Growth Stagnation

Traffic and revenue forecasts were tested under severe demographic growth stagnation scenarios. Demographic growth was assumed to lag by five and ten years behind the revised demographics used in the base forecast. For each alternative, the traffic and revenue estimates were evaluated for forecast year 2040. As can be seen in Table 6-10, the five-year lag demographics/trip tables result in a revenue and transactions decrease of 8.3 percent. In the case of a ten-year lag in demographic growth, revenue in 2040 would be 14.5 percent lower, and transactions would be 14.1 percent lower.

Table 6-10. Impacts of Severe Demographic Growth Stagnation

Year	2040 Revenue		2040 Revenue Index	
	Base	Alternative	Base	Alternative
5 Year Lag in Demographics	$2,301,903,000	$2,110,534,500	100	91.7
10 Year Lag in Demographics	$2,301,903,000	$1,968,285,900	100	85.5
Year	**2040 Transactions**		**2040 Transactions Index**	
	Base	Alternative	Base	Alternative
5 Year Lag in Demographics	1,227,591,500	1,125,376,100	100	91.7
10 Year Lag in Demographics	1,227,591,500	1,053,910,300	100	85.9

Impacts of AVI Share and Revenue Recovery Assumptions

The impacts on the revenue forecasts due to the current AVI share and revenue recovery assumption changes were tested for multiple years. For this test, it was assumed that there would be no change in the total transactions. As can be seen in Table 6-11, the estimated revenue would be approximately one percent lower after 2030 if the alternate AVI share assumptions (under which the AVI share peaks at 80 percent) are used.

As shown in Table 6-12, if the ZipCash revenue recovery is assumed to be 10 percent lower than the base case in all forecast years, the revenue would be 1.2 percent lower in 2017 and 1.0 percent lower in 2040. If the ZipCash revenue recovery is assumed to be 10 percent higher than the base case in all forecast years, the revenue would be 1.2 percent higher in 2017 and 1.0 percent higher in 2040.

Table 6-11. Impacts of AVI Participation

Year	Revenue				Revenue Index	
	Base TollTag Share	Base Revenue	Alternate TollTag Share	Alternate Revenue	Base	Alternate TollTag Share
2017	**78.6%**	$795,034,300	**78.4%**	$793,723,700	100.0	99.8
2018	**79.0%**	$843,189,300	**78.6%**	$840,711,500	100.0	99.7
2019	**79.4%**	$885,895,300	**78.7%**	$882,570,500	100.0	99.6
2020	**79.7%**	$930,556,400	**78.8%**	$926,365,000	100.0	99.5
2030	**82.1%**	$1,503,965,800	**79.5%**	$1,488,687,400	100.0	99.0
2040	**83.3%**	$2,301,903,000	**79.7%**	$2,271,604,400	100.0	98.7
2050	**84.0%**	$3,394,062,300	**79.9%**	$3,343,825,800	100.0	98.5
2060	**84.4%**	$3,645,266,100	**79.9%**	$3,587,322,500	100.0	98.4
2017-2066		**$127,252,514,700**		**$125,490,188,100**		**98.6**

Table 6-12. Impacts of ZipCash Revenue Recovery

Year	Revenue			Revenue Index		
	Base ZipCash Recovery	0.9 ZipCash Recovery	1.1 ZipCash Recovery	Base ZipCash Recovery	0.9 ZipCash Recovery	1.1 ZipCash Recovery
2017	$795,034,300	$785,321,400	$804,747,400	100.0	98.8	101.2
2040	$2,301,903,000	$2,277,742,700	$2,326,063,400	100.0	99.0	101.0

Impacts of Truck Traffic Shares

The impacts of lower truck traffic shares on NTTA System revenue are shown in Table 6-13. In this test, the total number of the transactions is assumed to remain the same as the base forecast. As shown, 2017 NTTA System revenue would be 4.5 percent lower when the truck traffic share is reduced by 50 percent at all the toll gantries. In year 2040, the revenue would be 4.3 percent lower under a lower truck transaction share assumption.

Table 6-13. Impacts of Truck Traffic Shares

Year	Revenue		Revenue Index	
	Base	50% Drop in Truck Traffic Shares	Base	50% Drop in Truck Traffic Shares
2017	$795,034,300	$759,458,100	100	95.5
2040	$2,301,903,000	$2,203,108,900	100	95.7

Impacts of Revenue Days

The impacts of revenue days on NTTA System revenue are shown in Table 6-14. In this test, the number of revenue days is decreased by twelve, which translates to a reduction of ten percent in the weekend to weekday traffic ratio. As shown in Table 6-14, NTTA System revenue would be approximately 3.5 percent lower throughout the forecast period with the weekend to weekday traffic ratio reduced by 10 percent.

Table 6-14. Impacts of Revenue Days

Year	Revenue		Revenue Index	
	Base	10% Drop in Revenue Days	Base	10% Drop in Revenue Days
2020	$930,556,400	$898,298,200	100	96.5
2030	$1,503,965,800	$1,451,821,800	100	96.5
2040	$2,301,903,000	$2,222,126,200	100	96.5
2050	$3,394,062,300	$3,276,581,900	100	96.5
2060	$3,645,266,100	$3,518,061,000	100	96.5
2017-2066	$127,252,514,700	$122,849,067,300	100	96.5

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Appendix A

Independent Demographic Review

This appendix contains the documentation of the independent demographic review as provided by the subconsultant, Research and Demographic Solutions. This report was provided to CDM Smith in August 2017.

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NTTA System

Independent Socioeconomic Analysis

August 2017

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INTRODUCTION AND PURPOSE

Research and Demographic Solutions Group (RDS) was commissioned by CDM Smith to perform an independent socioeconomic analysis concerning household, population, and employment forecasts along the North Texas Tollway Authority (NTTA) System roadways. The NTTA System is defined as eight toll roads: the Dallas North Tollway (DNT), the President George Bush Turnpike (PGBT), the Sam Rayburn Tollway (SRT), the Chisholm Trail Parkway (CTP), the Addison Airport Toll Tunnel (AATT), the Mountain Creek Lake Bridge (MCLB) and the Lewisville Lake Toll Bridge (LLTB). This report provides an independent socioeconomic analysis of selected areas in proximity of the NTTA System roadways in light of the North Central Texas Council of Government's (NCTCOG) Metropolitan Transportation Plan, "Mobility 2040", which was adopted by the Regional Transportation Council in March 2016.

RDS evaluated the latest socioeconomic forecasts (prepared by NCTCOG), for accuracy and reasonableness, detailed to the level of Traffic Analysis Process, or TAP zones. Focus was narrowed to TAP zones directly affecting portions of the NTTA System. The RDS evaluation was completed for the years of 2017, 2027, 2037, and 2040.

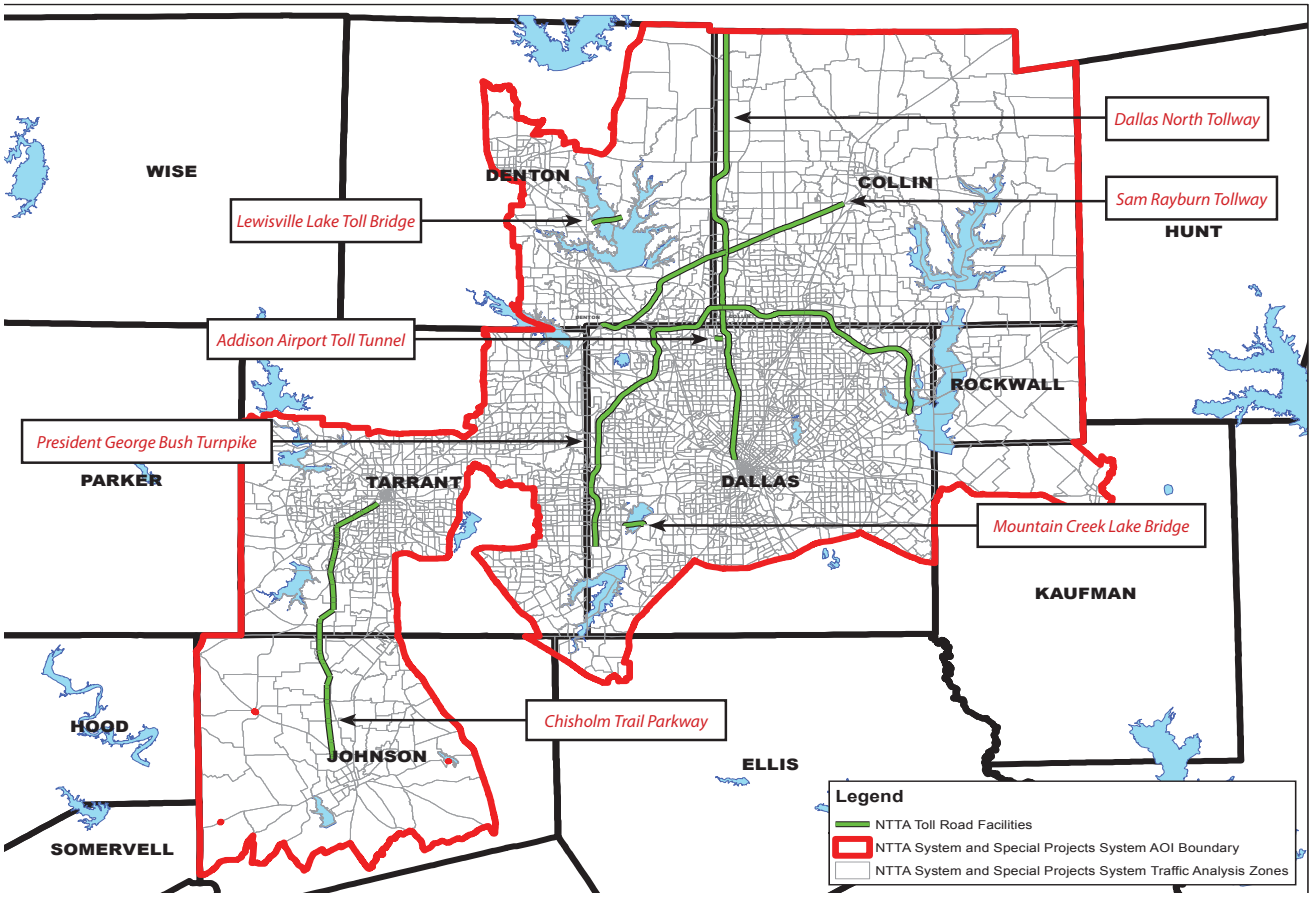
RDS also identified and calculated major emerging economic trends which directly impact the level and distribution of future socioeconomic growth in the Dallas-Fort Worth Metropolitan Statistical Area (DFW MSA). Such trends include patterns in land use, transportation improvements, and major planned developments. RDS evaluated any factors that will likely change economic growth potential or the overall distribution of economic growth. Examples include, but are not limited to future rail stations and rail line extensions, infrastructure expansions and airport development.

Full citations are provided for methodologies, sources of development trends and projections, and narratives defining and detailing important issues affecting future socioeconomic growth in proximity of the NTTA System roadways.

NTTA System Area of Interest Map

The Area of Interest (AOI) for this study includes all of Collin and Rockwall Counties, as well as portions of Dallas, Denton, Johnson, Kaufman and Tarrant Counties in proximity to the NTTA System as shown in Figure 1. CDM Smith and RDS identified 4,039 TAP zones for initial review. Criteria were then developed to help select the most active TAP zones for review.

Figure 1: Area of Interest Map

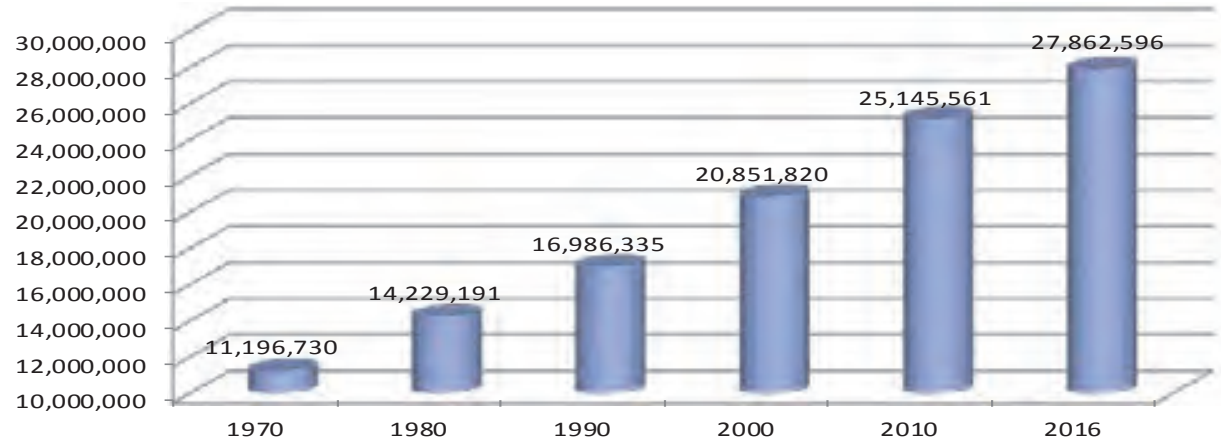


POPULATION TRENDS AND PROJECTIONS

State of Texas

Texas continues to be one of the fastest growing states in the US. After the decennial census, the Census Bureau reported that Texas added nearly 4.3 million persons between 2000 and 2010, a 20.6 percent increase in total population. Most likely, this upward curve will continue, mainly due to the state's high Hispanic migration and their accompanying birth rates.[1] As of 2016, the Hispanic population makes up over 39 percent of Texas' overall population, and has risen over 15 percent since 2010. Figure 4 shows the trends in Texas population from 1970 through 2016.

Figure 2: State of Texas Total Population 1970 - 2016



Source: US Census Bureau

Texas' population growth is expected to be strong going forward. The state's relatively low cost of living, attractive business climate, low tax rates, and diversified economy all should contribute to sizable future population gains. Depending on varying rates of migration and natural increase, the Texas State Data Center (TxSDC) estimates that anywhere from 30.3 to 45 million people will live in the state by 2040, as shown in Table 1. Though, the TxSDC recommends using the 0.5 scenario (half of migration in the 2000's) for long term planning purposes and the 2000-2010 scenario (post 2000 trends) for the short term (3-10 years).

Table 1: Texas State Population Projections (in Millions)

Scenarios	2010	2015	2020	2025	2030	2035	2040	2010-2040 Growth	Compound Annual Growth Rate 2010-2040
TxSDC 0.0 Scenario	25.1	26.2	27.3	28.2	29.0	29.7	30.3	5.2	0.63%
TxSDC 0.5 Scenario	25.1	26.9	28.8	30.7	32.7	34.6	36.6	11.5	1.27%
TxSDC 2000-2010 Scenario	25.1	27.7	30.5	33.7	37.2	40.9	45.0	19.9	1.97%
Woods & Poole	25.2	27.5	29.7	32.2	34.8	37.5	40.2	15.0	1.57%
Texas Water Development Board	25.1	27.3	29.5	31.6	33.6	35.7	37.7	12.6	1.37%

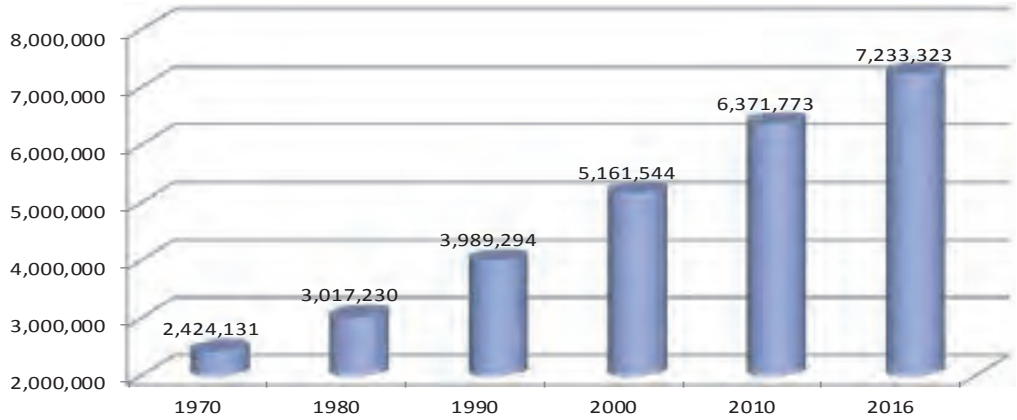
Source: 2014 Texas State Data Center, 2017 Woods & Poole, 2016 Texas Water Development Board

1. "Texas population tops 25 million in 2010 Census" Fort Worth Star Telegram, 21 December, 2010.

DFW Metropolitan Statistical Area

Between 2000 and 2016, the Dallas-Fort Worth-Arlington Metropolitan Statistical Area[2] (MSA) experienced the second largest regional population gain in the country and now has over 7.2 million residents, as shown in Figure 3. Overall, the MSA has added over 2 million persons in this time period. To put this in perspective, the MSA has added two entire Collin County populations from 2000 to 2016. Furthermore, the DFW MSA is averaging 22,600 more people per year from 2010-2016 than in the 2000-2010 period.

Figure 3: Dallas-Fort Worth-Arlington MSA Population 1970 - 2016



Source: US Census Bureau

Even though residential construction has slowed in many areas of the country, all forecasting agencies including the NCTCOG, the Texas State Data Center, Woods & Poole, and the Texas Water Development Board agree that the region will continue to see very strong household and population growth through 2040. There are a myriad of attributes that contribute to the overall regional projections. These include a recent history of strong growth, affordable and available land with no limiting geographic boundaries such as an ocean or foreign border, the relatively low cost of doing business in the state and region, central geographic location in the U.S., favorable weather and amenities, etc.

Historical Population Trends

Table 2 shows the historical populations of Dallas, Tarrant, Collin, Denton, Rockwall, Ellis, and Johnson Counties during the past 56 years. Collectively, the population of these seven counties grew from 1.7 million residents in 1960 to more than 6.7 million residents during 2016. Almost two-thirds of that population growth occurred in Dallas and Tarrant Counties. However, Collin County experienced the most rapid rate of growth with a CAGR of 5.74 percent between 1960 and 2016, from 41,247 to 939,585 residents. The CAGR's of Denton and Rockwall Counties increased by over 5 percent, respectively, during this same period. The population in the region's southern suburban counties grew more slowly, with Ellis County growing by 2.5 percent and Johnson County increasing by 2.8.

2. The DFWA MSA is comprised of Collin, Dallas, Delta, Denton, Ellis, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant and Wise Counties.

Table 2: Historical Population for Select Counties in the Dallas-Fort Worth MSA, 1960-2016

Total Population

	Collin County	Dallas County	Denton County	Ellis County	Johnson County	Rockwall County	Tarrant County	Total
1960	41,247	951,527	47,432	43,395	34,720	5,878	538,495	1,662,694
1970	66,920	1,327,321	75,633	46,638	45,769	7,046	716,317	2,285,644
1980	144,576	1,556,390	143,126	59,743	67,649	14,528	860,880	2,846,892
1990	264,036	1,852,810	273,525	85,167	97,165	25,604	1,170,103	3,768,410
2000	491,272	2,216,808	433,065	111,415	126,622	43,023	1,449,290	4,871,495
2010	782,341	2,368,139	662,614	149,610	150,934	78,337	1,809,034	6,001,009
2016	939,585	2,574,984	806,180	168,499	163,274	93,978	2,016,872	6,763,372

Total Population Change

	Collin County	Dallas County	Denton County	Ellis County	Johnson County	Rockwall County	Tarrant County	Total
1960-1970	25,673	375,794	28,201	3,243	11,049	1,168	177,822	622,950
1970-1980	77,656	229,069	67,493	13,105	21,880	7,482	144,563	561,248
1980-1990	119,460	296,420	130,399	25,424	29,516	11,076	309,223	921,518
1990-2000	227,236	363,998	159,540	26,248	29,457	17,419	279,187	1,103,085
2000-2010	291,069	151,331	229,549	38,195	24,312	35,314	359,744	1,129,514
2010-2016	157,244	206,845	143,566	18,889	12,340	15,641	207,838	762,363
1960-2016	**898,338**	**1,623,457**	**758,748**	**125,104**	**128,554**	**88,100**	**1,478,377**	**5,100,678**

Compound Annual Growth Rate

	Collin County	Dallas County	Denton County	Ellis County	Johnson County	Rockwall County	Tarrant County	Total
1960-1970	4.96%	3.38%	4.78%	0.72%	2.80%	1.83%	2.89%	3.23%
1970-1980	8.01%	1.60%	6.59%	2.51%	3.98%	7.50%	1.86%	2.22%
1980-1990	6.21%	1.76%	6.69%	3.61%	3.69%	5.83%	3.12%	2.84%
1990-2000	6.41%	1.81%	4.70%	2.72%	2.68%	5.33%	2.16%	2.60%
2000-2010	4.76%	0.66%	4.34%	2.99%	1.77%	6.18%	2.24%	2.11%
2010-2016	3.10%	1.42%	3.33%	2.00%	1.32%	3.08%	1.81%	2.01%
1960-2016	**5.74%**	**1.79%**	**5.19%**	**2.45%**	**2.80%**	**5.07%**	**2.39%**	**2.54%**

Source: U.S. Census Bureau, 2016

Recent Population Trends

Table 3 shows the populations of the ten largest metropolitan statistical areas (MSAs) in the United States. The largest MSAs in the United States during the U.S. Census Bureau's 2016 population estimates were the New York-Newark-Jersey City, NY MSA (20.2 million residents), the Los Angeles-Long Beach-Anaheim, CA MSA (13.3 million residents), and the Chicago-Naperville-Elgin, IL MSA (9.5 million residents). The Dallas-Fort Worth-Arlington, TX MSA (hereafter referred to as the Dallas-Fort Worth MSA) was ranked as the fourth largest MSA in the United States during the 2010 Census and in the U.S. Census Bureau's 2016 population estimates. During 2016, the estimated population of the Dallas-Fort Worth MSA was 7.2 million residents, which was an increase of over 2 million new residents since the 2000 decennial U.S. Census.

On an average annualized basis, the Dallas-Fort Worth MSA grew by approximately 127,000 residents each year between 2000 and 2016, which was slightly less growth than the Houston-The Woodlands-Sugar Land, TX MSA's 130,000 per year. The Houston MSA, which was the only other Texas MSA ranked among the ten largest in the United States, had a population of almost 6.77 million residents during 2016. When ordered by total population change between the 2000 decennial U.S. Census and the U.S. Census Bureau's 2016 population estimates, the Houston MSA was estimated to have had the largest overall population growth of 2.08 million (see Table 4). The Dallas-Ft. Worth MSA was the second fastest growing population with 2.03 million new residents, followed by the Atlanta-Sandy Springs-Roswell, GA MSA with 1.53 million new residents. Though not on the Top 10 list, the 12th largest MSA in the US, Phoenix-Mesa-Scottsdale, AZ has added 1.4 million new residents from 2000 to 2016 making it the fourth MSA in total growth.

Table 3: Largest Metropolitan Areas in the United States, 2000-2016

		TOTAL POPULATION			TOTAL	AVERAGE ANNUAL CHANGE		CAGR	
RANK	MSA	2000	2010	2016	2000 to 2016	2000 to 2010	2010 to 2016	2000 to 2010	2010 to 2016
1	New York-Newark-Jersey City, NY-NJ-PA	18,944,519	19,567,410	20,153,634	1,209,115	62,289	97,704	0.32%	0.49%
2	Los Angeles-Long Beach-Anaheim, CA	12,365,627	12,828,837	13,310,447	944,820	46,321	80,268	0.37%	0.62%
3	Chicago-Naperville-Elgin, IL-IN-WI	9,098,316	9,461,105	9,512,999	414,683	36,279	8,649	0.39%	0.09%
4	Dallas-Fort Worth-Arlington, TX	5,204,126	6,426,214	7,233,323	2,029,197	122,209	134,518	2.13%	1.99%
5	Houston-The Woodlands-Sugar Land, TX	4,693,161	5,920,416	6,772,470	2,079,309	122,726	142,009	2.35%	2.27%
6	Washington-Arlington-Alexandria, DC-VA-MD-WV	4,837,428	5,636,232	6,131,977	1,294,549	79,880	82,624	1.54%	1.41%
7	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	5,687,147	5,965,343	6,070,500	383,353	27,820	17,526	0.48%	0.29%
8	Miami-Fort Lauderdale-West Palm Beach, FL	5,007,564	5,564,635	6,066,387	1,058,823	55,707	83,625	1.06%	1.45%
9	Atlanta-Sandy Springs-Roswell, GA	4,263,438	5,286,728	5,789,700	1,526,262	102,329	83,829	2.17%	1.53%
10	Boston-Cambridge-Newton, MA-NH	4,391,344	4,552,402	4,794,447	403,103	16,106	40,341	0.36%	0.87%

Source: U.S. Census Bureau, 2010 and 2016

Table 4: Fastest Growing Metropolitan Areas in the United States, 2000-2016

		TOTAL POPULATION			TOTAL CHANGE	AVERAGE ANNUAL CHANGE		CAGR	
RANK	MSA	2000	2010	2016	2000 to 2016	2000 to 2010	2010 to 2016	2000 to 2010	2010 to 2016
1	Houston-The Woodlands-Sugar Land, TX Metro Area	4,693,520	5,920,499	6,772,470	2,078,950	122,698	141,995	2.35%	2.27%
2	Dallas-Fort Worth-Arlington, TX Metro Area	5,204,627	6,426,241	7,233,323	2,028,696	122,161	134,514	2.13%	1.99%
3	New York-Newark-Jersey City, NY-NJ-PA Metro Area	18,945,888	19,566,471	20,153,634	1,207,746	62,058	97,861	0.32%	0.49%
4	Atlanta-Sandy Springs-Roswell, GA Metro Area	4,263,135	5,286,725	5,789,700	1,526,565	102,359	83,829	2.18%	1.53%
5	Miami-Fort Lauderdale-West Palm Beach, FL Metro Area	5,007,956	5,566,298	6,066,387	1,058,431	55,834	83,348	1.06%	1.44%
6	Washington-Arlington-Alexandria, DC-VA-MD-WV Metro Area	4,837,674	5,636,416	6,131,977	1,294,303	79,874	82,594	1.54%	1.41%
7	Los Angeles-Long Beach-Anaheim, CA Metro Area	12,365,597	12,828,961	13,310,447	944,850	46,336	80,248	0.37%	0.62%
8	Phoenix-Mesa-Scottsdale, AZ Metro Area	3,251,884	4,193,127	4,661,537	1,409,653	94,124	78,068	2.57%	1.78%
9	Seattle-Tacoma-Bellevue, WA Metro Area	3,043,934	3,439,808	3,798,902	754,968	39,587	59,849	1.23%	1.67%
10	San Francisco-Oakland-Hayward, CA Metro Area	4,123,734	4,335,561	4,679,166	555,432	21,183	57,268	0.50%	1.28%

Source: U.S. Census Bureau, 2010 and 2016

Table 5 provides population counts from the 2000 and 2010 decennial U.S. Censuses, as well as the U.S. Census Bureau's 2016 population estimates. These data show that the population of counties in the DFW region grew strongly between 2000 and 2016. The most population growth occurred in Tarrant County, with an estimated 567,582 new residents since 2000. Collin County also grew robustly during this same period increasing by 448,313 new residents. However, since the 2010 U.S. Census, the compounded rate of population growth has slowed in all of the counties, with the exception of Dallas County. Dallas County's population growth accelerated from a CAGR of 0.66 percent between 2000 and 2010 to an estimated CAGR of 1.42 percent between 2010 and 2016. Rockwall County's population growth, on the other hand, slowed dramatically from a 6.17 percent CAGR between 2000 and 2010 to 3.08 percent from 2010 to 2016.

Table 5: Recent Population Trends for Select Counties in the Dallas-Fort Worth MSA, 2000-2016

	TOTAL POPULATION			TOTAL CHANGE	AVERAGE ANNUAL CHANGE		CAGR	
COUNTY	2000	2010	2016	2000 to 2016	2000 to 2010	2010 to 2016	2000 to 2010	2010 to 2016
Collin	491,272	782,459	939,585	448,313	29,119	26,188	4.76%	3.10%
Dallas	2,216,808	2,366,672	2,574,984	358,176	14,986	34,719	0.66%	1.42%
Denton	433,065	662,387	806,180	373,115	22,932	23,966	4.34%	3.33%
Ellis	111,415	149,597	168,499	57,084	3,818	3,150	2.99%	2.00%
Johnson	126,622	150,944	163,274	36,652	2,432	2,055	1.77%	1.32%
Rockwall	43,023	78,326	93,978	50,955	3,530	2,609	6.17%	3.08%
Tarrant	1,449,290	1,810,614	2,016,872	567,582	36,132	34,376	2.25%	1.81%

Source: U.S. Census Bureau, 2010 and 2016

Table 6 shows a comparison of the population growth in the northern and southern suburban counties between 2000 and 2016. Dallas and Tarrant Counties are considered the core urban counties of the region, while Collin, Denton, Rockwall, Ellis, and Johnson are considered suburban counties. During this 16-year period, the population in the northern suburban counties of Collin, Denton, and Rockwall was estimated to have increased by 872,383 residents compared to 93,736 new residents in the southern counties of Ellis and Johnson. In addition to the total growth of the northern counties' population being over nine times greater than the southern counties', the CAGR of the northern counties was also more than twice the CAGR of the southern.

Table 6: Comparison of Recent Population Growth in Northern and Southern Suburban Counties

COUNTY	TOTAL POPULATION			TOTAL CHANGE	CAGR
	2000	2010	2016	2000-2016	2000-2016
Northern Suburban Counties					
Collin	491,272	782,459	939,585	448,313	4.14%
Denton	433,065	662,387	806,180	373,115	3.96%
Rockwall	43,023	78,326	93,978	50,955	5.00%
Total	967,360	1,523,172	1,839,743	872,383	4.10%
Southern Suburban Counties					
Ellis	111,415	149,597	168,499	57,084	2.62%
Johnson	126,622	150,944	163,274	36,652	1.60%
Total	238,037	300,541	331,773	93,736	2.10%

Source: U.S. Census Bureau, 2010 and 2016

Population Projections

Table 7 shows the three most recent population projection scenarios from the Texas State Data Center (SDC) for the Dallas-Fort Worth MSA. The projected population for the Dallas-Fort Worth MSA is expected to be between 7.6 million and 12.7 million residents in 2040. The most conservative scenario, the 0.0 migration scenario, assumes that there will be no net migration and the population will grow solely based upon the number of births and deaths in the region. The 0.5 migration scenario assumes that future net migration will be one-half the rate that occurred between the 2000 and 2010 decennial U.S. Censuses. The 1.0 migration scenario assumes that future net migration will be equal to the net migration rate between 2000 and 2010. The historical growth rate of the population for the Dallas-Fort Worth MSA implies that the region's population will likely grow at a rate between the 0.5 and 1.0 migration scenarios.

Table 7: Population Projections for the Dallas-Fort Worth MSA, 2010-2040

Total Population

Year	0.0 Migration Scenario	0.5 Migration Scenario	1.0 Migration Scenario
2010	6,426,214	6,426,214	6,426,214
2015	6,709,089	6,907,216	7,117,896
2020	6,957,648	7,404,982	7,920,671
2025	7,181,036	7,929,976	8,862,581
2030	7,379,698	8,485,436	9,970,678
2035	7,542,914	9,059,825	11,254,710
2040	7,664,893	9,643,009	12,728,992

Average Annual Growth

Year	0.0 Migration Scenario	0.5 Migration Scenario	1.0 Migration Scenario
2010-2015	56,575	96,200	138,336
2015-2020	49,712	99,553	160,555
2020-2025	44,678	104,999	188,382
2025-2030	39,732	111,092	221,619
2030-2035	32,643	114,878	256,806
2035-2040	24,396	116,637	294,856

Compounded Annual Growth Rate

Year	0.0 Migration Scenario	0.5 Migration Scenario	1.0 Migration Scenario
2010-2015	0.87%	1.45%	2.07%
2015-2020	0.73%	1.40%	2.16%
2020-2025	0.63%	1.38%	2.27%
2025-2030	0.55%	1.36%	2.38%
2030-2035	0.44%	1.32%	2.45%
2035-2040	0.32%	1.26%	2.49%

Source: Texas State Data Center, 2014

Table 8 illustrates the SDC's population projections for seven counties in the Dallas-Fort Worth MSA. Assuming historical net migration trends continue (i.e. the 1.0 migration scenario), Dallas County's future primacy as the most populous county in the region could be challenged by the year 2050, as the populations of Collin, Denton and Tarrant Counties could all potentially grow to 3 million or more residents.

Table 8: Population Projections for Select Counties in the Dallas-Fort Worth MSA, 2010-2050

0.0 Migration Scenario

	Collin County	Dallas County	Denton County	Ellis County	Johnson County	Rockwall County	Tarrant County
2010	782,341	2,368,139	662,614	149,610	150,934	78,337	1,809,034
2015	809,437	2,494,020	693,369	154,612	155,818	80,097	1,887,452
2020	828,675	2,606,067	720,105	159,859	160,685	81,678	1,956,598
2025	846,917	2,705,604	742,388	165,190	165,419	83,626	2,018,340
2030	865,233	2,792,044	763,485	169,689	169,289	85,577	2,073,248
2035	879,106	2,868,815	780,617	172,678	171,983	86,902	2,117,199
2040	884,212	2,938,026	791,841	174,273	173,814	87,041	2,148,314
2045	878,934	2,998,139	796,493	175,165	175,167	86,179	2,167,418
2050	865,919	3,049,758	796,412	175,957	176,390	84,970	2,178,210

0.5 Migration Scenario

	Collin County	Dallas County	Denton County	Ellis County	Johnson County	Rockwall County	Tarrant County
2010	782,341	2,368,139	662,614	149,610	150,934	78,337	1,809,034
2015	877,059	2,495,544	739,627	163,726	161,634	87,646	1,922,967
2020	975,957	2,621,131	822,601	179,078	173,103	97,466	2,039,890
2025	1,085,840	2,743,221	912,862	195,994	185,635	108,383	2,162,147
2030	1,211,461	2,859,701	1,014,812	213,832	198,761	120,573	2,287,581
2035	1,350,148	2,973,345	1,125,612	231,733	211,925	133,579	2,410,666
2040	1,496,177	3,086,679	1,242,750	249,455	225,251	146,334	2,528,520
2045	1,644,157	3,198,694	1,365,258	267,465	239,104	158,783	2,642,486
2050	1,794,493	3,311,187	1,495,119	286,483	254,140	171,220	2,758,129

1.0 Migration Scenario

	Collin County	Dallas County	Denton County	Ellis County	Johnson County	Rockwall County	Tarrant County
2010	782,341	2,368,139	662,614	149,610	150,934	78,337	1,809,034
2015	949,673	2,496,859	789,094	173,277	167,760	95,829	1,959,449
2020	1,150,398	2,639,966	943,020	200,285	186,847	115,985	2,127,850
2025	1,398,711	2,789,908	1,133,997	231,539	209,399	139,788	2,319,797
2030	1,712,183	2,939,645	1,377,090	267,038	235,730	168,455	2,532,853
2035	2,102,453	3,087,695	1,678,705	306,282	265,634	202,127	2,759,275
2040	2,575,965	3,235,511	2,047,293	349,418	299,530	240,581	2,993,599
2045	3,138,155	3,382,850	2,493,025	396,792	338,453	284,129	3,237,640
2050	3,801,840	3,528,964	3,031,597	448,922	383,739	333,656	3,497,034

Note: Table 8 only provides population projections for 7 of the 12 counties in the Dallas-Fort Worth MSA.
Source: Texas State Data Center, 2014

Table 9 compares the Texas SDC's population projections for the northern suburban counties to the southern suburban counties. Depending upon the migration scenario, the population of the northern counties in 2040 will be between 5 and 7.5 times the population of the southern counties. At the higher end of the projection scenarios (i.e. the 1.0 migration scenario), the population of the three northern counties would be approximately 4.8 million residents versus almost 650,000 in the southern counties.

Table 9: Comparison of Population Projections for Northern Suburban Counties to Southern Suburban Counties (2010-2040)

	0.0 Migration Scenario		0.5 Migration Scenario		1.0 Migration Scenario	
	Northern	**Southern**	**Northern**	**Southern**	**Northern**	**Southern**
2010	1,523,292	300,544	1,523,292	300,544	1,523,292	300,544
2020	1,630,458	320,544	1,896,024	352,181	2,209,403	387,132
2030	1,714,295	338,978	2,346,846	412,593	3,257,728	502,768
2040	1,763,094	348,087	2,885,261	474,706	4,863,839	648,948

Source: Texas State Data Center, 2014

NTTA System City-Level Population Trends

Many cities in the NTTA System AOI have seen tremendous growth over the past forty-six years, but the "second ring" suburbs have seen the fastest growth over the last ten. Overall, the City of Dallas saw the most absolute growth by adding about 473,000 residents from 1970 to 2016. Fort Worth's population boom since 2000 saw it grow 460,000 persons- 69 percent of this growth from 2000 to 2016. over the same timeframe. Plano, one of the nation's fastest growing suburbs between 1970 and 2000, grew by over 200,000, but slowed to a 1.6 percent growth rate over the past sixteen years. Collin County's second and third largest cities, Frisco and McKinney, have added over 118,000 people since 2000 while two of the county's smaller towns, Prosper and Celina, have seen their populations grow annually by 14 percent and 10 percent respectively.

Table 10: Historical City Population 1970-2016

City	1970 Census Bureau (Apr 1)	1980 Census Bureau (Apr 1)	1990 Census Bureau (Apr 1)	2000 Census Bureau (Apr 1)	2010 Census Bureau (Apr 1)	2016 Census Bureau (Apr 1)	Compound Annual Growth Rate 1970-2000	Compound Annual Growth Rate 2000-2016
Addison	593	5,553	8,783	14,166	13,056	15,368	11.16%	0.51%
Allen	1,940	8,314	18,309	43,554	84,246	99,179	10.93%	5.28%
Anna	736	855	904	1,225	8,249	11,940	1.71%	15.29%
Arlington	90,643	160,113	261,721	332,969	365,438	392,772	4.43%	1.04%
Balch Springs	10,464	13,746	17,406	19,375	23,728	25,017	2.07%	1.61%
Bedford	10,049	20,821	43,762	47,152	46,979	49,528	5.29%	0.31%
Benbrook	8,169	13,579	19,564	20,208	21,234	22,948	3.07%	0.80%
Burleson	7,713	11,734	16,113	20,976	36,690	45,016	3.39%	4.89%
Carrollton	13,855	40,595	82,169	109,576	119,097	133,351	7.14%	1.23%
Celina	1,272	1,520	1,737	1,861	6,028	8,006	1.28%	9.55%
Cleburne	16,015	19,218	22,205	26,005	29,337	30,223	1.63%	0.94%
Cockrell Hill	3,515	3,262	3,746	4,443	4,193	4,280	0.78%	-0.23%
Colleyville	3,342	6,700	12,724	19,636	22,807	26,152	6.08%	1.81%
Coppell	1,728	3,826	16,881	35,958	38,659	41,360	10.65%	0.88%
Corinth	461	1,264	3,944	11,325	19,935	21,078	11.26%	3.96%
Crowley	2,662	5,852	6,974	7,467	12,838	14,969	3.50%	4.44%
Dallas	844,401	904,078	1,006,877	1,188,580	1,197,816	1,317,929	1.15%	0.65%
Duncanville	14,105	27,781	35,748	36,081	38,524	39,457	3.18%	0.56%
Euless	19,316	24,002	38,149	46,005	51,277	54,769	2.93%	1.10%
Fairview	463	893	1,554	2,644	7,248	8,354	5.98%	7.46%
Farmers Branch	27,492	24,863	24,250	27,508	28,616	34,988	0.00%	1.51%
Fate	329	263	475	497	6,357	10,703	1.38%	21.15%
Flower Mound	1,685	4,402	15,527	50,702	64,669	73,547	12.02%	2.35%
Forney	1,745	2,483	4,070	5,588	14,661	19,122	3.96%	7.99%
Fort Worth	393,476	385,164	447,619	534,697	741,206	854,113	1.03%	2.97%
Frisco	1,845	3,420	6,138	33,714	116,989	163,656	10.17%	10.38%
Garland	81,437	138,857	180,650	215,768	226,876	234,943	3.30%	0.53%

Source: U.S. Census Bureau, 2010 and 2016

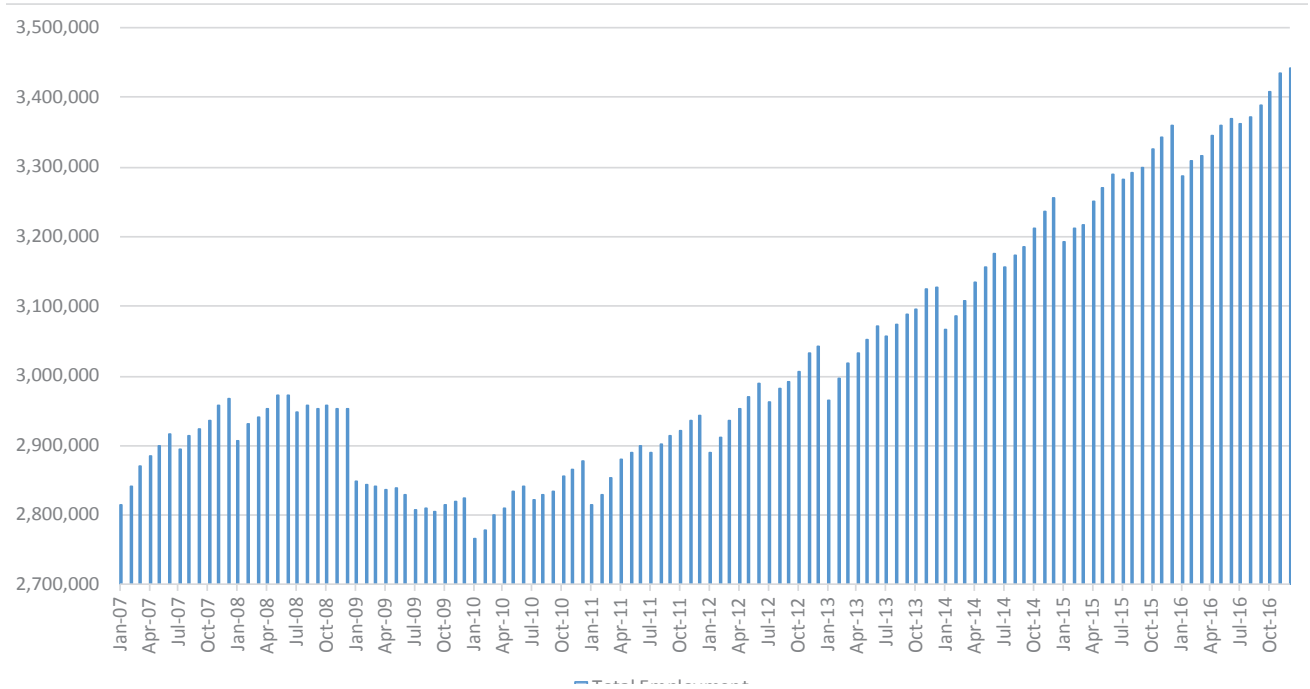
City	1970 Census Bureau (Apr 1)	1980 Census Bureau (Apr 1)	1990 Census Bureau (Apr 1)	2000 Census Bureau (Apr 1)	2010 Census Bureau (Apr 1)	2016 Census Bureau (Apr 1)	Compound Annual Growth Rate 1970-2000	Compound Annual Growth Rate 2000-2016
Grand Prairie	50,904	71,462	99,616	127,427	175,396	190,682	3.11%	2.55%
Grapevine	7,049	11,801	29,202	42,059	46,334	51,971	6.13%	1.33%
Haltom City	28,127	29,014	32,856	39,018	42,409	44,361	1.10%	0.81%
Hickory Creek	218	1,422	1,893	2,078	3,247	4,222	7.81%	4.53%
Highland Park	10,133	8,909	8,739	8,842	8,564	9,149	-0.45%	0.21%
Highland Village	516	3,246	7,027	12,173	15,056	16,624	11.11%	1.97%
Hurst	27,215	31,420	33,574	36,273	37,337	39,016	0.96%	0.46%
Irving	97,260	109,943	155,037	191,615	216,290	236,607	2.29%	1.33%
Joshua	924	1,470	3,821	5,031	6,088	6,846	5.81%	1.94%
Lake Dallas	1,431	3,177	3,656	6,166	7,105	7,892	4.99%	1.55%
Lewisville	9,264	24,273	46,521	77,737	95,290	104,439	7.35%	1.86%
Little Elm	363	926	1,255	3,646	25,898	42,504	7.99%	16.59%
Lucas	540	1,371	2,205	2,890	5,166	7,211	5.75%	5.88%
Mansfield	3,658	8,102	15,607	28,031	56,368	65,631	7.02%	5.46%
McKinney	15,193	16,249	21,283	54,369	131,117	172,298	4.34%	7.48%
Melissa	504	604	557	1,350	4,695	8,423	3.34%	12.12%
Mesquite	55,131	67,053	101,484	124,523	139,824	143,736	2.75%	0.90%
Murphy	261	1,150	1,547	3,099	17,708	20,482	8.60%	12.53%
North Richland Hills	16,514	30,592	45,895	55,635	63,343	69,204	4.13%	1.37%
Plano	17,872	72,331	128,713	222,030	259,841	286,057	8.76%	1.60%
Princeton	1,105	3,408	2,321	3,477	6,807	9,405	3.90%	6.42%
Prosper	501	675	1,018	2,097	9,423	18,379	4.89%	14.53%
Richardson	48,405	72,496	74,840	91,802	99,223	113,347	2.16%	1.33%
Richland Hills	8,865	7,977	7,978	8,132	7,801	8,121	-0.29%	-0.01%
River Oaks	8,193	6,890	6,580	6,985	7,427	7,740	-0.53%	0.64%
Rockwall	3,121	5,939	10,486	17,976	37,490	43,586	6.01%	5.69%
Rowlett	2,243	7,522	23,260	44,503	56,199	60,236	10.47%	1.91%
Royse City	1,535	1,566	2,206	2,957	9,349	12,093	2.21%	9.20%
Sachse	777	1,640	5,346	9,751	20,329	25,039	8.80%	6.07%
Seagoville	4,390	7,304	8,969	10,823	14,835	16,093	3.05%	2.51%
Southlake	2,031	2,808	7,065	21,519	26,575	30,991	8.19%	2.31%
Sunnyvale	995	1,404	2,228	2,693	5,130	6,194	3.37%	5.34%
Terrell	14,182	13,169	12,490	13,606	15,816	17,329	-0.14%	1.52%
The Colony	N/A	11,586	22,113	26,531	36,328	42,408	N/A	2.97%
University Park	23,498	22,254	22,259	23,324	23,068	24,905	-0.02%	0.41%
Wylie	2,675	3,152	8,716	15,132	41,427	47,701	5.95%	7.44%

EMPLOYMENT TRENDS AND PROJECTIONS

Regional and County

In the past, a downturn in the oil industry meant a downturn in the Dallas-Fort Worth job market. Recently, the diversity of the region's economy has helped it weather these downturns due to well-represented job strength in the service industries - specifically professional and business services, education and health services and leisure and hospitality. Prior to the region's steady employment growth, the workforce in the Dallas-Fort Worth MSA fared comparatively well during the 2008-2009 national recession. While there were substantial job losses, those losses have been replaced with new jobs and the local economy had more workers at the end of 2012 than it did before the recession began. This accomplishment eluded the national economy. Figure 4 shows the total employment in the Dallas-Fort Worth MSA between 2007 and 2016 based upon the Texas Workforce Commission's Quarterly Census of Employment and Wages (QCEW) data. The overall trend for the region has been positive, although not consistently so. The region had approximately 2.80 million jobs during January 2007, growing to a peak of 2.97 million jobs during May 2008. After that point, the region's employment began to slowly decline with a sharp contraction occurring in December 2008. During that month, employment in the Dallas-Fort Worth MSA dropped by more than 100,000 jobs. While a decline in the number of workers between December and January is typical, since it is a period of seasonal employment, the lack of recovery during subsequent months demonstrates that these job cuts were indeed permanent. The region's total employment fell to its lowest level during January 2010, when it reached 2.75 million jobs. Since then, barring seasonal fluctuations, total employment has steadily risen in the Dallas-Fort Worth MSA topping out in December 2016 at 3.44 million jobs.

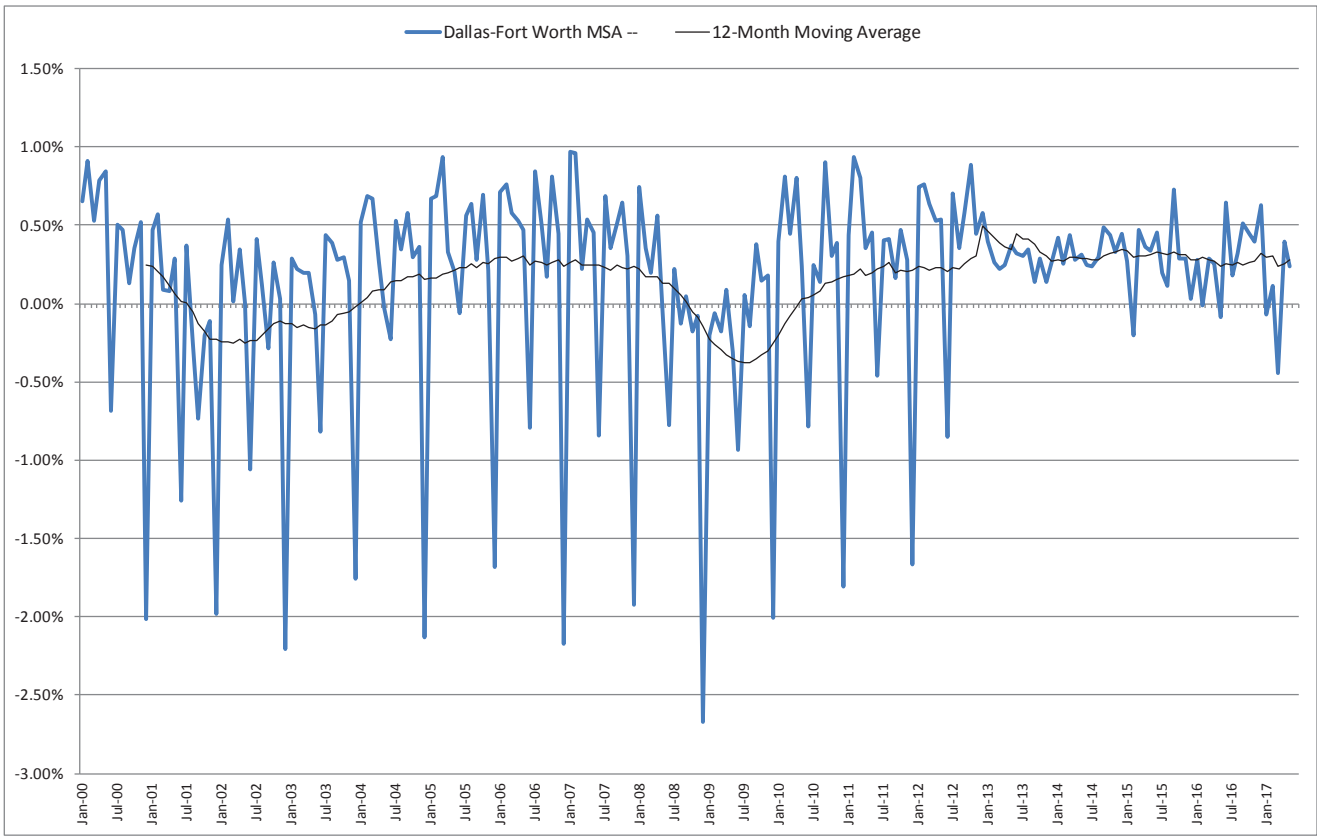
Figure 4: Total Employment in the Dallas-Fort Worth MSA, 2007-2016



Note: Figure based upon Quarterly Census of Employment and Wages (QCEW) data.
Source: Texas Workforce Commission, 2016

Figure 5 shows a longer period of employment data using the Texas Workforce Commission's Current Employment Estimates (CES) data. The CES data differ from the QCEW data, since they are based upon surveys of employers rather than the actual count of employees, as the QCEW data are. Nonetheless, the discrepancies between the actual and estimated employment numbers tend to be relatively consistent, so the CES data can provide a reasonable surrogate for understanding employment trends when longer term QCEW data are not available. The data in Figure 5 show the percentage month-on-month employment change between January 2000 and June 2017. The unadjusted employment change shows considerable volatility, due to seasonal and academic employment. However, by adding a trend line showing the 12-month moving average, this volatility can be smoothed and the trends can be discerned. The 12-month moving average trend line shows that the Dallas-Fort Worth region suffered a prolonged period of job loss between 2001 and 2003, due to the downturn in the computer and telecommunications industries, in addition to the recessionary effects of the September 11, 2001 terrorist attacks. The region's economy recovered by early 2004 and enjoyed a period of sustained employment growth until 2008, when the national recession took hold. Although the job loss of the 2008-2009 Recession occurred over a briefer period than the previous recession, the job losses were steeper. Since mid-2010, the Dallas-Fort Worth MSA has experienced another sustained period of employment growth similar to the mid-2000s.

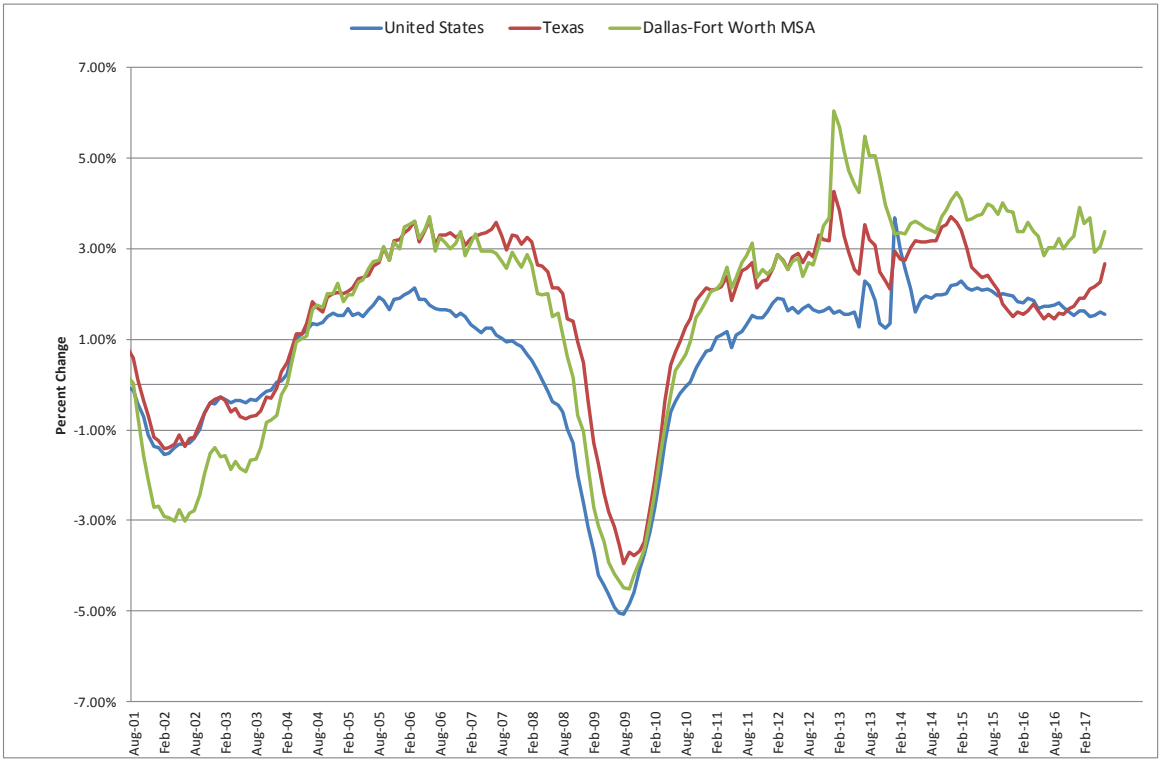
Figure 5: Month-on-Month Employment Change for Dallas-Fort Worth MSA, January 2000 to June 2017



Note: Figure based upon Current Employment Statistics (CES) data.
Source: Texas Workforce Commission, 2017

Figure 6 shows the year-on-year employment change for the United States, Texas, and the Dallas-Fort Worth MSA. These data show that the recession which began in 2001 had a more significant effect on the Dallas-Fort Worth region, than it did on the United States or Texas. After recovering, the region's employment grew more quickly through the mid-2000s than it did in the nation overall, with a rate of growth that was very similar to Texas' overall rate. In fact, employment change in the Dallas-Fort Worth region has outperformed the overall rate for the United States through June 2017, even during periods when total employment was contracting. Although it did not de-couple from the Texas economy, the region underperformed against the Texas economy, starting in early 2007, and continued to do so until early 2011. More recently, the Dallas-Fort Worth MSA has been consistently outperforming Texas since November 2012.

Figure 6: Year-on-Year Employment Change for the United States, Texas, and the Dallas-Fort Worth MSA, January 2001 to February 2017



Note: Figure based upon Current Employment Statistics (CES) data.

Source: Texas Workforce Commission, 2017

Table 11 shows more detailed employment data for the four largest MSAs in Texas during the period between 2007 through 2016. The data show that the Dallas-Fort Worth MSA had a net employment increase of 532,133 jobs between 2007 and 2016 which was the highest overall job growth of the four MSA's. However, when compared against the other three largest MSAs in the state, the Dallas-Fort Worth MSA has the second-slowest CAGR at 1.88 percent. The Houston MSA had the second largest overall job growth among the MSA's with 395,204 new jobs between 2007 and 2016, but the Austin MSA had the highest CAGR at 2.91 percent, adding 221,522 new jobs. Thus, while the Dallas-Fort Worth region has had very robust population growth, its rate of employment growth during the period between 2007 and 2016 lagged other regions of the state.

Table 11: Total Employment in Largest Texas MSAs, 2007-2016

TOTAL EMPLOYMENT

Year	Austin MSA	Dallas-Fort Worth MSA	Houston MSA	San Antonio MSA
2007	750,695	2,911,034	2,499,284	824,924
2008	763,661	2,953,003	2,550,857	835,064
2009	736,747	2,807,633	2,462,311	815,512
2010	753,072	2,828,338	2,481,571	824,966
2011	781,201	2,901,350	2,549,166	843,774
2012	812,768	2,978,641	2,650,875	864,673
2013	846,022	3,072,972	2,744,902	890,325
2014	880,441	3,172,166	2,841,026	919,331
2015	925,108	3,290,660	2,885,369	948,866
2016	972,217	3,443,167	2,894,488	994,638

TOTAL EMPLOYMENT CHANGE

Year	Austin MSA	Dallas-Fort Worth MSA	Houston MSA	San Antonio MSA
2007-2008	12,966	41,969	51,573	10,140
2008-2009	-26,914	-145,370	-88,546	-19,552
2009-2010	16,325	20,705	19,260	9,454
2010-2011	28,129	73,012	67,595	18,808
2011-2012	31,567	77,291	101,709	20,899
2012-2013	33,254	94,331	94,027	25,652
2013-2014	34,419	99,194	96,124	29,006
2014-2015	44,667	118,494	44,343	29,535
2015-2016	47,109	152,507	9,119	45,772
2007-2016	**221,522**	**532,133**	**395,204**	**169,714**

COMPOUNDED ANNUAL GROWTH RATE

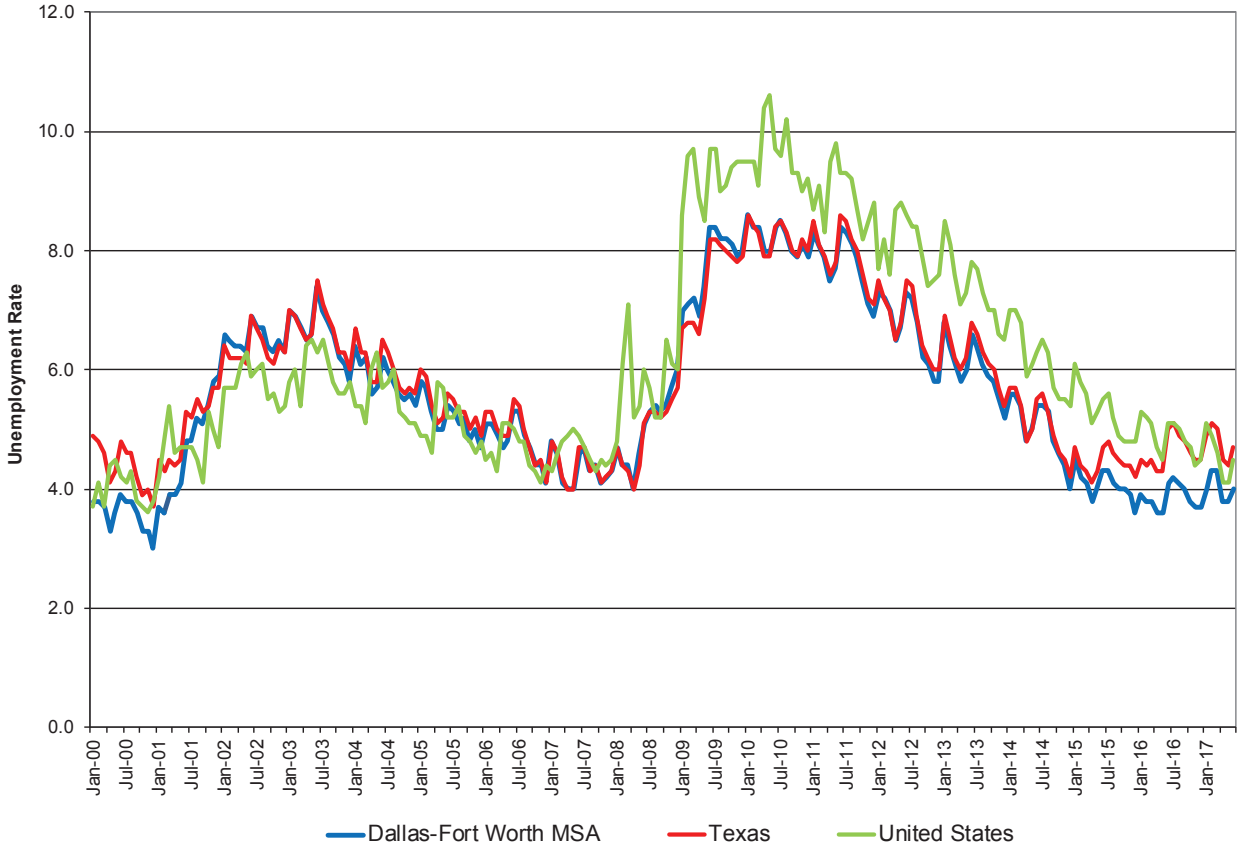
Year	Austin MSA	Dallas-Fort Worth MSA	Houston MSA	San Antonio MSA
2007-2008	1.73%	1.44%	2.06%	1.23%
2008-2009	-3.52%	-4.92%	-3.47%	-2.34%
2009-2010	2.22%	0.74%	0.78%	1.16%
2010-2011	3.74%	2.58%	2.72%	2.28%
2011-2012	4.04%	2.66%	3.99%	2.48%
2012-2013	4.09%	3.17%	3.55%	2.97%
2013-2014	4.07%	3.23%	3.50%	3.26%
2014-2015	5.07%	3.74%	1.56%	3.21%
2015-2016	5.09%	4.63%	0.32%	4.82%
2007-2016	**2.91%**	**1.88%**	**1.64%**	**2.10%**

Note: Table based upon QCEW data. Source: Texas Workforce Commission, 2016.

Unemployment

Figure 7 shows the unemployment rates for the United States, Texas, and the Dallas-Fort Worth MSA. These data show the unemployment rate in the region has closely tracked the overall unemployment rate in Texas during most of the period between January 2000 and June 2017. The Dallas-Fort Worth MSA experienced its lowest unemployment rate during December 2000, when it fell to 3.0 percent. During the recession that began in 2001, the regional unemployment rate peaked at 7.5 percent in June 2003. As the regional and national economy recovered and employment expanded during the mid-2000s, the regional unemployment rate fell to approximately 4.0 percent before increasing rapidly during 2008 and 2009. During the 2008-2009 Recession, the regional unemployment rate reached 8.5 percent in June 2009 and sustained that general level for the next two years. From 2011 to 2017, the regional unemployment rate has followed a downward trend until December 2014, and since it has hovered close to 4 percent .

Figure 7: Unemployment Rate of Dallas-Fort Worth MSA, Texas, and the United States, January 2000 to June 2017



Note: The unemployment rate data in Figure 7 are based upon seasonally unadjusted unemployment rates. The unadjusted figures were used to maintain consistency between the three geographies of the United States, Texas, and the Dallas Fort-Worth MSA. While seasonally adjusted data are available from the Texas Workforce Commission for the United States and Texas, they are not available for Texas's MSAs.

Source: Texas Workforce Commission, 2017

REAL ESTATE TRENDS

Relocations of over 75 company headquarters since 2010 has spurred an strong growth in both residential and commercial construction throughout the Dallas-Fort Worth region. Domestic and international investment in DFW remains strong and will likely assure supply increases in almost all facets of the real estate markets for some time to come. Like almost every metropolitan area in the United States, the 2008-2009 Recession had a profound impact on the regional housing market, as well as commercial real estate. The near collapse of the nation's financial system and the severe curtailment of demand due to the subsequent recession led to a sharp reduction in the number of new single-family homes built after 2006. Multifamily construction was also severely impacted by the recession, although it later benefitted because fewer households were able to secure the financing to purchase new homes. Similarly, all aspects of commercial real estate were affected by the recession, either due to tight credit markets or financially stressed tenants. Fortunately, the nation's commercial real estate market did not experience the same collapse as the residential market (a real and significant threat at the time) and it has been showing a continuing positive movement over the past seven years.

Residential Trends

Figure 8 shows the U.S. Census Bureau's single-family building permit data from Real Estate Center at Texas A&M University, which reports the number of monthly single-family building permits issued in the Dallas-Fort Worth-Arlington MSA, based upon 2013 U.S. Census MSA boundaries. In this 29-year time frame, historical single family building permit activity in the Metroplex showed relatively steady growth after the stock market crash in 1988 until the housing bubble burst in Fall of 2006. After bottoming out in January 2009, the region has seen - barring a few seasonal hiccups - steady, sustained growth up to the most recent June 2017 MSA totals. Since November 2014, the MSA's single family permits issued have averaged more than 80 per day. Low interest rates, job growth, pent-up demand and low supply will likely result in the region's single family construction rates continue to climb in the foreseeable future.

Figure 9 illustrates the number of single-family building permits issued in Collin, Dallas, Denton and Tarrant Counties. The data show that building permit activity was especially robust in Tarrant County through 2006, reaching almost 2,000 permits during October 2005, then dropped sharply thereafter to less than 500 single-family permits per month through April 2013. Denton County, on the other hand, was a less active market throughout this period and the number of single-family building permits issued actually began declining during 2002. Overall, monthly building permit activity during 2012 and early 2013 was lower than that in early 2000. Since January 2013, all counties have experienced a significant upswing in residential construction. In 2017, the monthly average for the four counties averaged 2,500 permits, up from 2,120 in 2016.

Figure 8: Single-Family Building Permits Issued in Dallas and Fort Worth-Arlington MSAs
January 2000 to June 2017

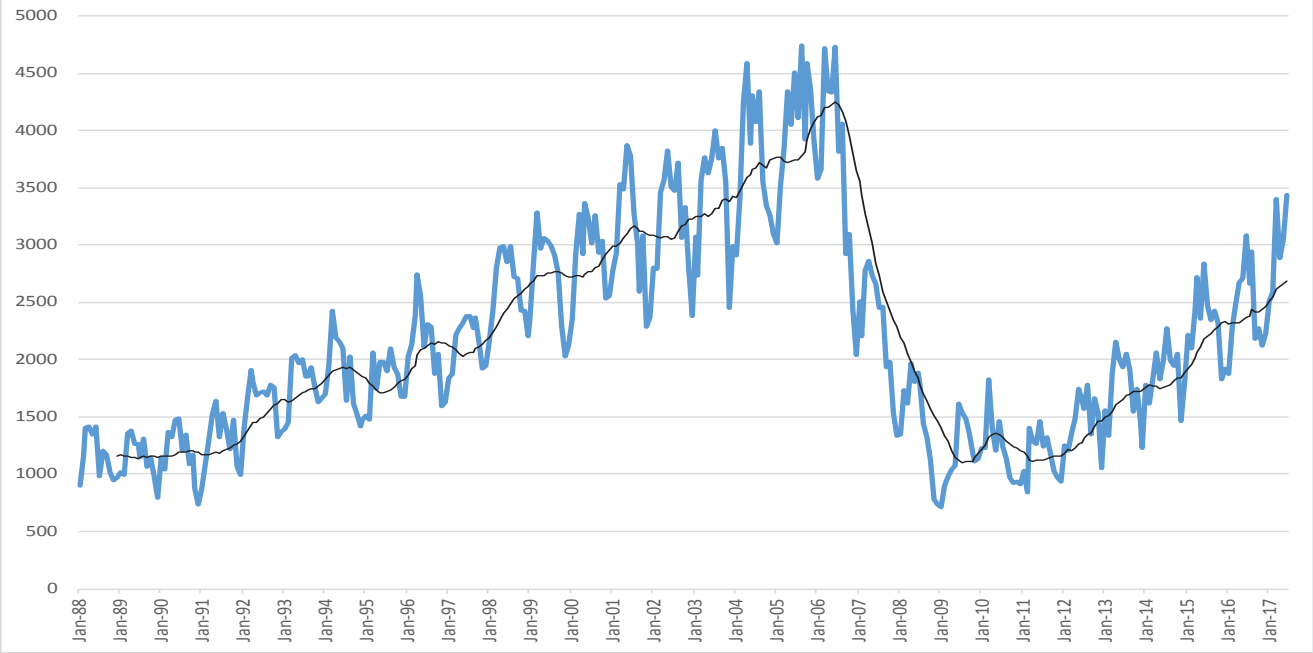
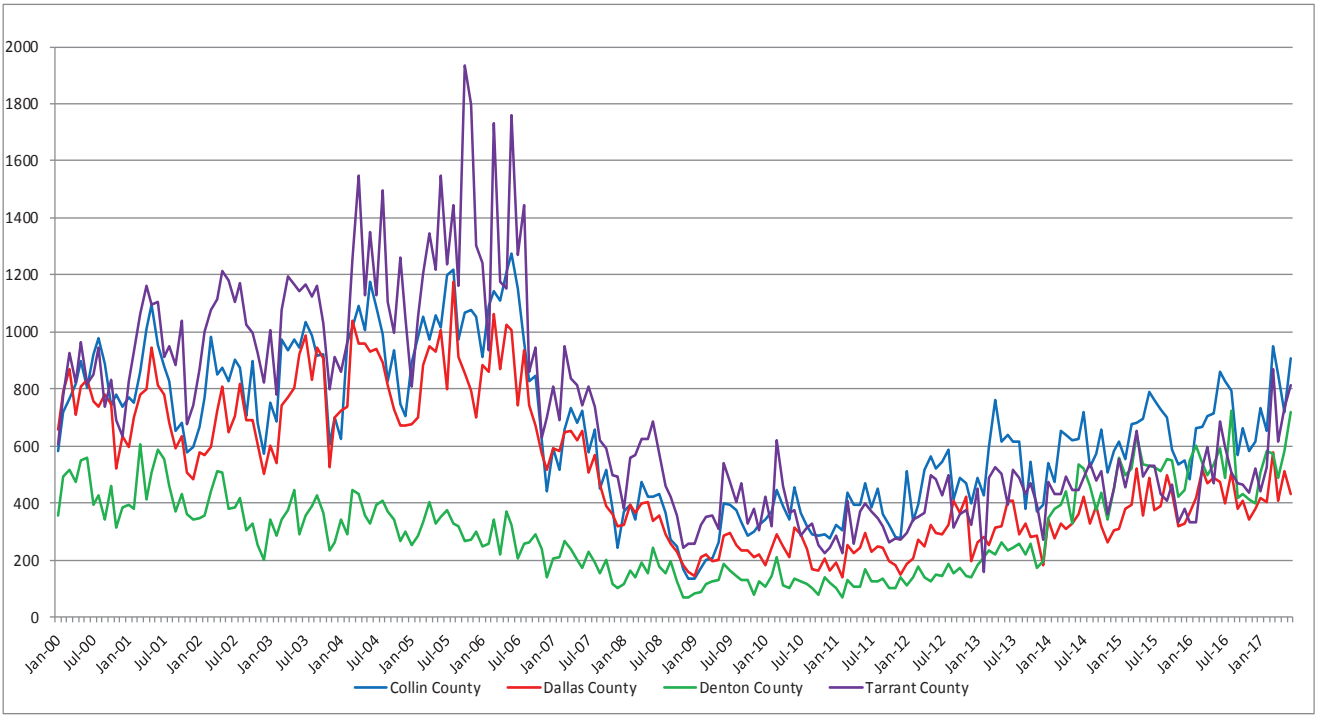


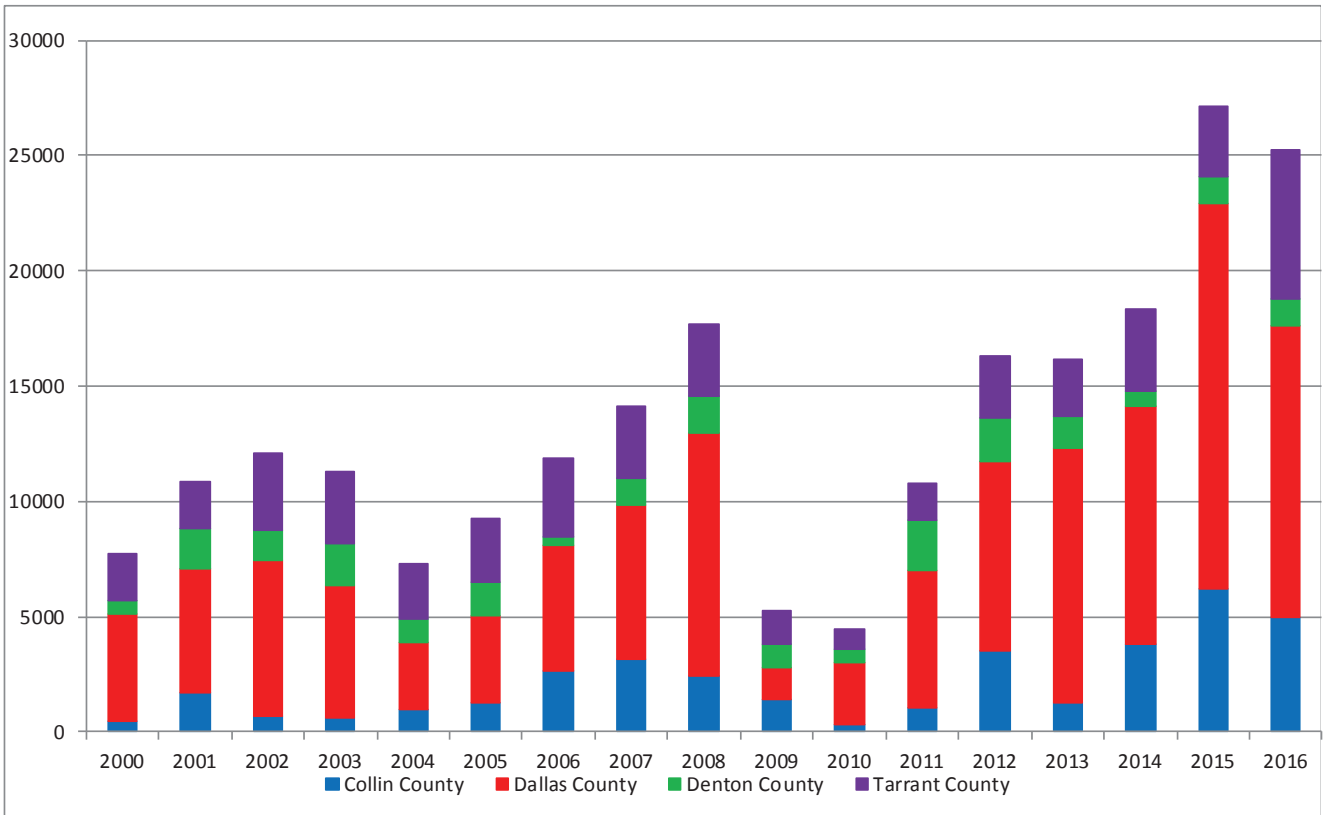
Figure 9: Single-Family Building Permits Issued in Dallas, Tarrant, Collin and Denton Counties
January 2000 to June 2017



Sources: Texas A&M Real Estate Center, 2017

As shown in Figure 10, the number of permitted multifamily units in Dallas, Tarrant, Collin, and Denton Counties has varied substantially between 2000 and 2016. The number of permitted units was higher during the region's downturn from 2001 to 2003. As the single-family housing market began to grow, apartment construction slowed during 2004 before increasing again in 2005 and continued through 2008. However, during 2009, the number of units permitted fell by roughly two-thirds to 5,256 units and the number of permits issued during 2010 was even lower. However, as the region's population has continued to grow strongly and single-family homes became difficult for some segments of the population to purchase, the number of permitted multifamily units has increased dramatically. 2012 through 2014 saw 16,000 or more permits issued for the four counties, while in 2015 a historic 27,689 permits were confirmed, over 16,000 of these in Dallas County alone. 2016 starts continued at a remarkable pace throughout the region. As of 1Q2017, over 50,000 multifamily units are under construction in DFW, making it the top apartment market in the US.

Figure 10: Multifamily Units Permitted in Dallas, Tarrant, Collin, and Denton Counties 2000 - 2016



Source: Texas A&M Real Estate Center, 2017

Table 12 shows the conditions of multifamily housing within the various submarkets in the Dallas-Fort Worth region during 3Q2016 and 2Q2017. According to the real estate research firm Berkadia, the region had an overall occupancy rate of 92.3 percent during 2Q2017, down from 93.4 percent three quarters prior. Rents have increased in every submarket except two, for an overall regional increase of 3.4 percent or $1031 to $1066 per unit. The data in Table 12 also show the highest occupancy rates for multifamily are in the Far South and Far East Dallas County submarkets and the highest effective monthly rent is in the Uptown submarket at $1,647.

Table 12: Overview of the Dallas-Fort Worth Apartment Market during the Second Quarter 2017

	Occupancy		Average Monthly Rent		Average Rent PSF	
Submarket	**2Q17**	**3Q16**	**2Q17**	**3Q16**	**2Q17**	**3Q16**
Allen/McKinney	89.1%	91.0%	$1,144	$1,159	1.24	1.25
Carrollton/Farmers Branch	94.6%	93.7%	$1,118	$1,093	1.24	1.22
Denton	94.8%	95.9%	$1,064	$1,053	1.22	1.21
Downtown Dallas/West End/Deep Ellum	90.2%	89.2%	$1,484	$1,445	1.56	1.51
Downtown Ft Worth/TCU	86.2%	91.4%	$1,291	$1,255	1.47	1.43
Duncanville/Desoto/Cedar Hill/Lancaster	95.1%	94.2%	$872	$831	1.02	0.97
East Central Dallas/Lower Greenville	86.6%	95.3%	$1,296	$1,254	1.50	1.46
East Ft Worth/Woodhaven/I-30E	92.0%	91.0%	$785	$737	0.95	0.89
East Irving	95.9%	96.3%	$796	$765	0.99	0.95
East Plano/Richardson	88.0%	92.9%	$1,220	$1,213	1.30	1.30
Far East Dallas	90.8%	96.6%	$1,059	$1,034	1.13	1.11
Far North Dallas/Collin County	94.6%	95.7%	$1,008	$999	1.27	1.26
Far South Dallas/Waxahachie	96.3%	96.8%	$974	$971	1.06	1.06
Far Southwest Ft Worth	96.3%	92.4%	$846	$847	0.96	0.96
Garland	91.1%	95.8%	$947	$897	1.10	1.05
Grand Prairie	93.6%	92.8%	$973	$921	1.15	1.09
Grapevine/Roanoke/Keller	95.2%	95.6%	$1,225	$1,206	1.31	1.29
Haltom City/Richland Hills/Fossil Creek	95.4%	95.9%	$1,004	$957	1.11	1.06
Hurst/Euless/Bedford	94.7%	95.5%	$980	$947	1.16	1.12
Las Colinas/Valley Ranch/Coppell	93.4%	93.8%	$1,261	$1,225	1.39	1.35
Lewisville/Flower Mound	94.2%	93.5%	$1,093	$1,089	1.24	1.24
North Arlington	93.9%	93.8%	$924	$885	1.14	1.09
North Central Dallas/Upper Greenville	88.3%	90.8%	$1,130	$1,046	1.40	1.32
North Dallas/Addison	93.3%	94.7%	$1,123	$1,103	1.26	1.23
Northwest Dallas/Bachman Lake	96.3%	95.7%	$827	$805	1.05	1.02
NW Ft Worth/Saginaw/Eagle Mtn	95.9%	95.2%	$890	$842	0.95	0.90
Oak Cliff South	93.1%	92.5%	$794	$752	0.88	0.84
Skillman/I-635	92.4%	92.4%	$873	$826	1.11	1.05
South Arlington	95.3%	94.7%	$921	$882	1.09	1.04
South Fort Worth	93.4%	93.4%	$831	$796	0.95	0.91
Southeast Dallas/Mesquite	94.1%	94.3%	$822	$812	0.97	0.96
Southwest Ft Worth/Benbrook	93.6%	95.0%	$944	$909	1.12	1.08
Trinity Groves/Oak Cliff North	86.5%	90.7%	$1,109	$1,036	1.31	1.22
Uptown/Oaklawn/Highland Park	87.8%	90.7%	$1,647	$1,630	1.78	1.75
West Irving	95.5%	95.1%	$924	$885	1.14	1.09
West Plano/Frisco	87.1%	90.2%	$1,251	$1,245	1.34	1.34
Western Hills/Ridgmar/Ridglea	93.5%	93.2%	$799	$754	0.93	0.88
White Rock Lake/Tenison Park	93.8%	94.0%	$845	$807	1.05	1.01
Totals	**92.3%**	**93.4%**	**$1,066**	**$1,031**	**1.22**	**1.19**

Source: Berkadia DFW Multifamily Report, 2Q2017

Office Trends

Due to the influx of company headquarters to the region, the formation of new businesses and the growth of pre-existing ones, the office market in Dallas-Fort Worth continued to be strong with almost 11 million square feet under construction in 1Q17. According to the real estate firm Transwestern, the Dallas area office market had an overall vacancy rate of 15.6 percent during the first quarter of 2017, while the Fort Worth area office market had a vacancy rate of 14.1 percent (See Tables 13 and 14). Overall, the Dallas area market contained 252 million square feet of rentable space and the Fort Worth area market had 52 million square feet of rentable space. At the end of the first quarter of 2017, the net absorption (the difference between the amount of newly leased space in the market and new constructed space or formerly leased space that has returned to the market) in the Dallas area market was 1,176,963 square feet, which accounted for only a small portion of the 39.4 million square feet of vacant space. While the Fort Worth CBD showed net absorption at 31,565 square feet, this is attributable to new inventory coming on line and temporary factors. Geographically, the largest concentrations of office space in the Dallas-Fort Worth region are in the Dallas Central Business District, the Dallas North Tollway area, and the Upper Tollway/West Plano area, which has over 5.4 million square feet of office under construction. The highest vacancy rates during the first quarter of 2017 were found in the Northeast Fort Worth area (43.7 percent) and the Garland area (32.7percent). The Dallas CBD, with a vacancy rate of 22.2 percent, is improving, but is challenged by the popularity of uptown office properties.

Table 13: Overview of the Dallas Area Office Market during the First Quarter 2017

SUBMARKET	INVENTORY	TOTAL VACANCY SF	VACANCY RATE W/SUBLET 1Q 2017	UNDER CONSTRUCTION	NET ABSORPTION 1Q 2017
Dallas CBD	32,930,556	7,295,656	22.2%	353,637	(133,206)
Uptown/Turtle Creek	13,593,997	1,467,329	10.8%	1,295,323	183,581
White Rock	4,152,300	300,905	7.2%		(60,338)
Central Expressway	13,877,781	1,497,269	10.8%		(73,881)
Preston Center	5,378,248	508,808	9.5%	171,583	(47,370)
Stemmons Freeway	13,947,660	3,347,443	24.0%	63,000	(39,445)
South Irving	2,027,384	268,049	13.2%		(34,149)
Las Colinas/Urban Center	9,407,167	1,646,746	17.5%	100,000	(44,609)
Office Center/LBJ Extension	15,910,546	1,845,215	11.6%	514,359	464,882
DFW Freeport/Coppell	13,180,527	1,730,287	13.1%	366,219	596,668
West LBJ Freeway	4,922,226	886,015	18.0%		37,180
Denton/Lewisville	8,186,648	685,647	8.4%	56,000	(32,045)
Frisco/The Colony	5,418,660	666,672	12.3%	914,136	37,282
Allen/McKinney	5,800,024	684,233	11.8%	280,557	(23,211)
Upper Tollway/West Plano	25,829,323	3,247,371	12.6%	5,435,604	681,255
Plano	6,824,598	706,989	10.4%	2,800	(31,919)
Richardson	20,584,824	3,385,932	16.4%	322,000	(16,931)
Dallas North Tollway	21,974,823	3,543,020	16.1%		83,390
East LBJ Freeway	16,982,481	4,059,302	23.9%		(277,089)
Garland	2,035,382	665,767	32.7%		(24,708)

Table 13: Overview of the Dallas Area Office Market during the First Quarter 2017 (continued)

SUBMARKET	INVENTORY	TOTAL VACANCY SF	VACANCY RATE W/SUBLET 1Q 2017	UNDER CONSTRUCTION	NET ABSORPTION 1Q 2017
Southeast Dallas	622,365	44,600	7.2%		(6,261)
Mesquite/Rockwall	1,582,739	110,879	7.0%		11,968
Southwest Dallas	3,009,166	329,790	11.0%		5,209
Grand Prairie	4,050,884	472,120	11.7%	25,000	(58,953)
TOTAL - DALLAS	252,230,309	39,416,381	15.6%	9,925,418	1,176,963

Source: Transwestern DFW Office Market Report, 1Q2017

Table 14: Overview of the Fort Worth Area Office Market during the First Quarter 2017

SUBMARKET	INVENTORY	TOTAL VACANCY SF	VACANCY RATE W/SUBLET 1Q 2017	UNDER CONSTRUCTION	NET ABSORPTION 1Q 2017
Fort Worth CBD	11,299,975	1,163,900	10.3%	280,489	31,565
Northwest Fort Worth	430,807	25,113	5.8%	7,000	5,881
Alliance Air/Fossil Creek	3,226,939	173,521	5.4%	90,695	(13,112)
Westlake/Grapevine	7,933,395	1,177,141	14.8%	299,490	(26,527)
Hurst/Euless/Bedford	5,088,152	922,102	18.1%	14,914	21,047
Northeast Fort Worth	3,951,078	1,722,651	43.6%		110,457
Arlington	8,265,527	1,102,231	13.3%	3,000	6,691
Southeast Fort Worth	1,352,493	57,015	4.2%		15,799
Southwest Fort Worth	10,346,673	958,879	9.3%	173,084	34,903
TOTAL – FORT WORTH	51,895,039	7,302,553	14.1%	868,672	186,704

Source: Transwestern DFW Office Market Report, 1Q2017

Industrial/Warehousing Trends

As one of the primary distribution centers in the United States, the Dallas-Fort Worth region has an enormous amount of industrial/warehouse inventory totaling 747 million square feet as of the first quarter of 2017 (See Table 15). In the Dallas area market, there is 499.1 million square feet of rentable industrial space and 247.3 million square feet of rentable space in and around the Fort Worth area. In 1Q2017, a large number of deliveries to the region pushed the industrial/warehousing vacancy rate up slightly to 7 percent. Strong demand helped generate 4.3 million square feet in net absorption during 1Q17 and is a postive sign for the future market.

Table 15: Overview of the Dallas-Fort Worth Industrial Market during the First Quarter 2017

SUBMARKET	INVENTORY	SF AVAILABLE IMMEDIATELY	TOTAL VACANCY RATE 1Q2017	UNDER CONSTRUCTION	2017 YTD TOTAL NET ABSORPTION
Dallas					
Flex/High-Tech	78,628,318	5,671,798	7.2%	1,640,000	868,162
Manufacturing	54,369,593	6,461,523	11.9%	123,620	(228,067)
Warehouse Distribution	366,113,975	22,973,947	6.3%	10,725,606	2,133,993
TOTAL	499,111,886	35,107,268	7.0%	12,489,226	2,774,088
Fort Worth					
Flex/High-Tech	21,402,794	1,502,305	7.0%	300,000	113,528
Manufacturing	24,045,057	852,095	3.5%	19,000	405,919
Warehouse Distribution	202,470,587	14,727,668	7.3%	7,947,771	975,458
TOTAL	247,918,438	17,082,068	6.9%	8,266,771	1,494,905
DFW Metroplex					
Flex/High-Tech	100,031,112	7,174,103	7.2%	1,940,000	981,690
Manufacturing	78,414,650	7,313,618	9.3%	142,620	177,852
Warehouse Distribution	568,584,562	37,701,615	6.6%	18,673,377	3,109,451
TOTAL	747,030,324	52,189,336	7.0%	20,755,997	4,268,993

Source: Transwestern DFW Industrial Market Outlook, 2017

Retail Trends

Occupancy rates hit an all-time high in the Dallas-Fort Worth retail market reaching 94.6 percent during 2Q17. Strong big box absorption and retail demand caused the commercial retail market to absorb 1.56 million square feet during the quarter. The booming Far North Dallas submarket delivered 542,000 square feet in 2Q17 alone. Occupancy rates for retail were slightly higher in the Fort Worth area (94.9 percent) than in Dallas (94.4 percent). Asking rents have appeared to level off and many long-term leases will lock up retail space for considerable time likely causing new supply to be snapped up quickly.

Table 16: Overview of the Dallas-Fort Worth Retail Market during the Second Quarter 2017

MARKET	DELIVERED CONSTRUCTION 2017	TOTAL OCCUPANCY RATE	2Q17 NET ABSORPTION	AVG ASKING RENT PSF
Central Dallas	0	97.2%	-53,300	$24.70
Central Fort Worth	118,000	94.4%	161,418	$12.40
East Dallas Outlying	0	95.7%	54,036	$20.29
Far North Dallas	542,000	93.5%	280,463	$15.11
Mid-Cities	0	95.1%	99,018	$13.82
Near North Dallas	220,000	95.2%	210,362	$17.31
North Central Dallas	86,365	94.6%	326,587	$19.99
Southeast Dallas	0	95.5%	164,121	$15.34
Southwest Dallas	0	91.9%	54,983	$11.38
Suburban Fort Worth	102,000	95.0%	12,064	$12.79
West Dallas	0	94.8%	250,684	$12.67
Dallas Total	850,365	94.4%	1,287,936	$16.30
Fort Worth Total	220,000	94.9%	272,500	$13.23
TOTAL - DFW	1,068,365	94.6%	1,560,436	$15.25

Source: CBRE Marketview, 2Q 2017

RDS FORECAST REVIEW AND RESULTS

RDS was retained to review the latest socioeconomic forecasts for the NTTA System roadways for accuracy and reasonableness. For the purpose of this study, CDM provided RDS with households, population, and employment data from the demographic data that were used to develop Mobility 2040 at the TAP zone level. The data was provided by NCTCOG in four intervals, 2017, 2027, 2037 and 2040 for 4,039 TAP zones.

Passed in May 2015 by the Regional Transportation Council, the NCTCOG 2040 Demographic Forecast stands as the official demographic projection for the 2040 Metropolitan Plan. The projection process started with the establishment of regional household and employment control totals for the forecast years. The control totals were based on projections purchased from Dr. Ray Perryman, who has developed models for forecasting economic and demographic factors. The control totals were allocated to forecast districts using the Gravity Land Use Model (G-LUM). This specialized model was developed by Dr. Kara Kockelman at the University of Texas at Austin and further improved by NCTCOG staff in cooperation with UT Austin. The forecasts at the district level were then disaggregated to TAP zones using a disaggregation model developed at NCTCOG. TAP zone demographics were then sent to the respective cities for review and comment.

GIS Review: RDS relied heavily on geographic information system (GIS) technology during the comprehensive review process. RDS gathered multiple years of aerial photography, zoning and future land use maps, parcel boundaries and development databases for GIS analysis. Using GIS, RDS determined TAP zones where new development was likely to occur. RDS also acquired current housing data information from Metrostudy, one of the nation's leading new home research consultants. This data was also converted to a GIS dataset and mapped during the review process. Through the use of GIS, multiple datasets were displayed side-by-side. This allowed staff to review all model years of the NCTCOG Forecast simultaneously.

Households/Population: Original data from NCTCOG was provided to RDS by CDM Smith for the AOI for the years 2017, 2027, 2037 and 2040. After accounting for growth discrepancies between 2017 and 2027 in the original data, specific attention was given to areas that saw significant household growth. The housing data was plotted and future and vacant lot inventories were reviewed for inclusion. The development dataset also included residential projects and was mapped and reviewed with Metrostudy data (See Figure 11 for a sample map). Specific attention was also given to areas with the greatest potential of redevelopment. For example, the City of McKinney provided RDS a future land use shapefile that included their "Transit Village" designation. These villages are small geographic areas zoned for dense, multi-use development that is mass-transit and pedestrian friendly. Specific attention was given to areas like these, as well as future potential commuter rail stations or other land use or zoning areas that cities place focus on for future development.

Figure 11: Sample Development Monitoring Map

Employment: RDS staff reviewed the data with specific attention to zones that showed significant growth during the forecast years. The development database was very important, as many of the points of interest included building square footages and future projects. RDS also used consistent employees per square footage data (see Appendix C) for estimating job potential. The future year review used data and information gathered from the cities of McKinney, Plano, Frisco, Richardson, The Colony, Royse City, Dallas and DFW Airport and information from the development dataset that was labeled as under construction, future, or conceptual. Employment clusters around current and future rail stations, highway frontage, and CBD were also reviewed for potential growth or redevelopment.

Initial NCTCOG Data Adjustments: During preliminary analysis of NCTCOG's 2040 data, RDS discovered that 2,028 of the 4,038 TAP zones in the NTTA System roadway AOI showed decreases in households from 2017 to 2027 and similarly, 1,020 zones showed decreases in employment during the same timeframe. RDS reached out to NCTCOG's modeling team and was told that their 2017 data was derived using a different methodology than their 2027, 2037

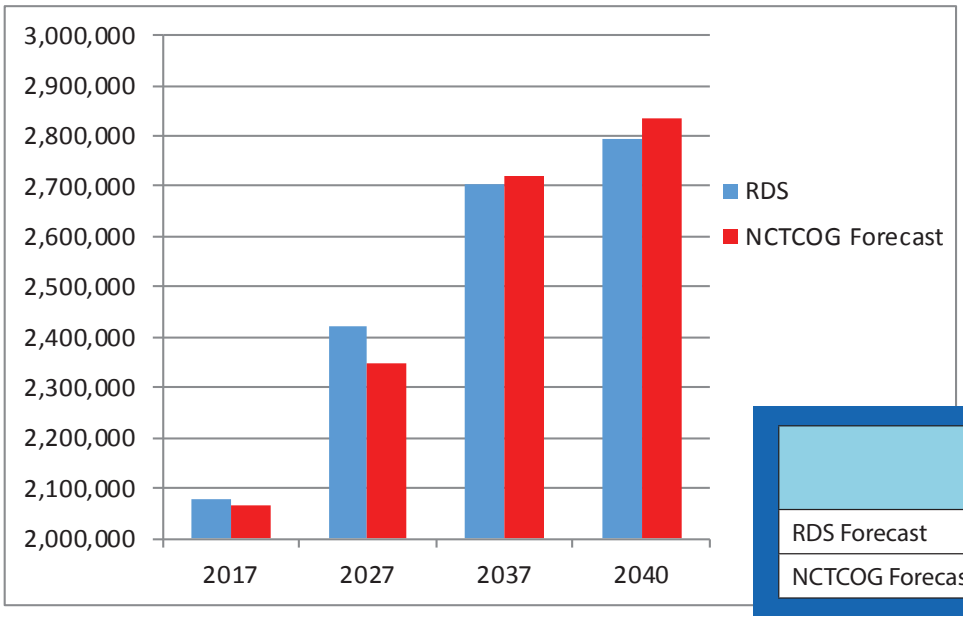
and 2040 totals. The team explained that 2017 data are based on observed data and will be naturally jagged in small geographies while the later data assume a smooth transition from one year to another.

In order for RDS to derive baseline 2017 TAP zone household data that was, in most cases, less than NCTCOG's 2027 totals, RDS used 2010 Census data and NCTCOG's 2027 households to interpolate new 2017 household figures. Each TAP zone was then reviewed for accuracy.

Establishing 2017 zonal totals where NCTCOG's employment figures decreased between 2017 and 2027 was more problematic because of the lack of an independent "official" count, especially at a small geography. Therefore, RDS used previous data from recent projects where 2012 and 2018 iterations were established and interpolated 2017 totals from there. Longitudinal Employer-Household Dynamics (LEHD) TAP zone totals were used as a guide during review as well. As with households, all TAP zones in the NTTA roadway AOI were reviewed by RDS Staff for accuracy.

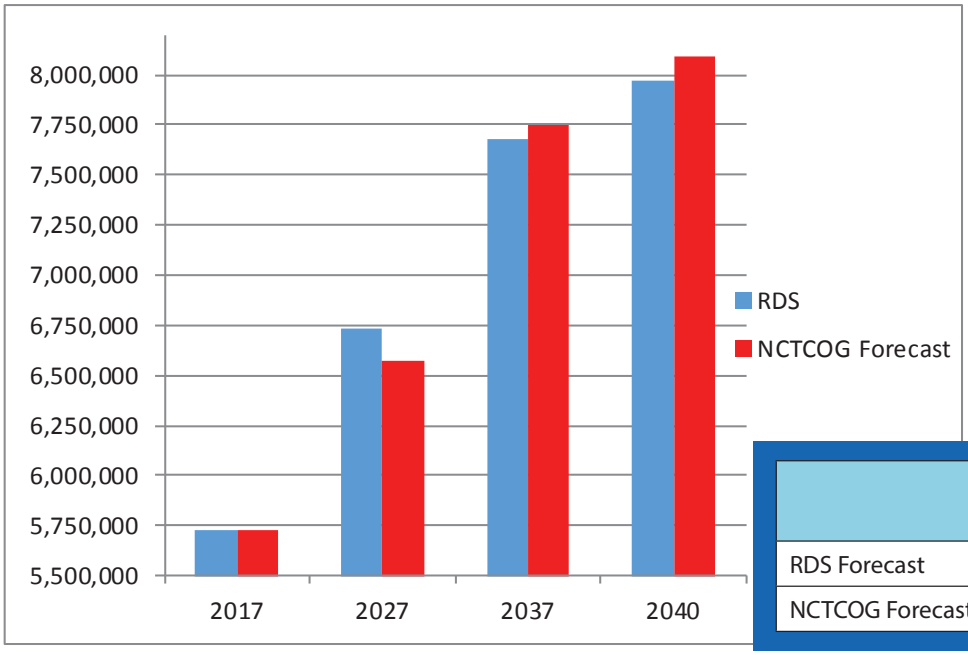
RDS 2017-2040 Review: Using GIS, Census data, new home reports, commercial development datasets and current year Appraisal District data for each individual TAP zone, iterations for 2017, 2027, 2037 and 2040 were reviewed for growth and reasonableness. RDS staff established their own totals for each. Household sizes were calculated using sizes established by the NCTCOG data to calculate population. Figures 12, 13, and 14 illustrate this growth from 2016 to 2040 and compare them by absolute and percentage growth as well as compound annual growth rate (CAGR) seen in RDS' and NCTCOG's forecasts.

Figure 12: RDS vs. NCTCOG Forecast Households (AOI only)



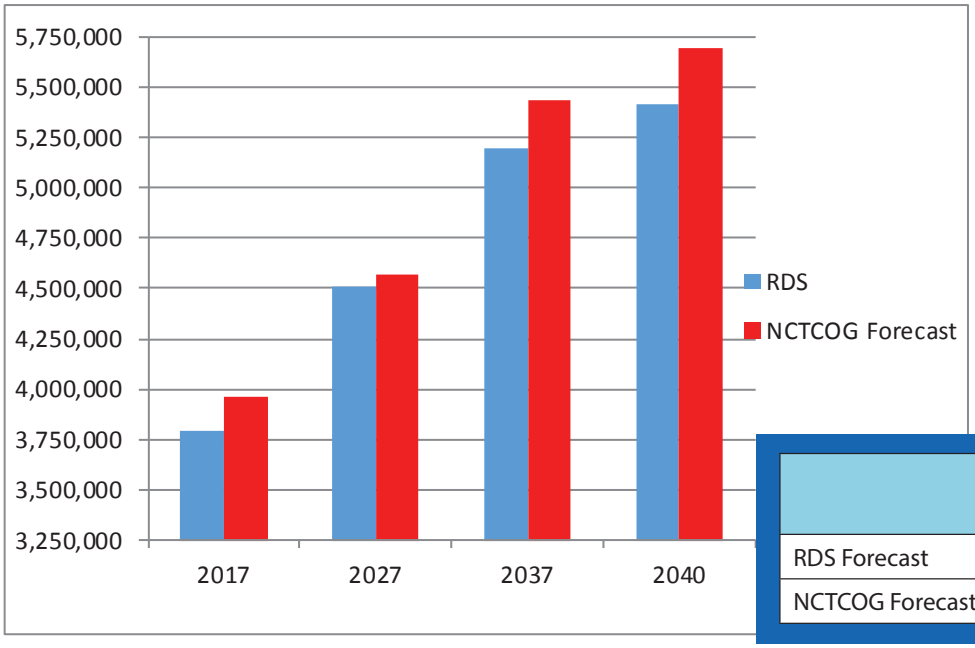
	17-40 CAGR	17-40 % Change
RDS Forecast	1.29%	34.2%
NCTCOG Forecast	1.38%	37.2%

Figure 13: RDS vs. NCTCOG Forecast Population (AOI only)



	17-40 CAGR	17-40 % Change
RDS Forecast	1.44%	39.1%
NCTCOG Forecast	1.51%	41..3%

Figure 14: RDS vs. NCTCOG Forecast Employment (AOI only)



	17-40 CAGR	17-40 % Change
RDS Forecast	1.56%	42.6%
NCTCOG Forecast	1.59%	43.8%

Table 17 illustrates NCTCOG's adopted and RDS' post-review AOI totals for households, population and employment for all forecast years.

Table 17: RDS and NCTCOG Area of Interest Statistics

	2017			2027		
	HH	POP	EMP	HH	POP	EMP
NTTA System (RDS)	2,080,277	5,731,170	3,795,299	2,423,375	6,732,256	4,512,938
NTTA System (NCTCOG)	2,064,212	5,725,541	3,959,547	2,347,974	6,572,192	4,572,799

	2037			2040		
	HH	POP	EMP	HH	POP	EMP
NTTA System (RDS)	2,703,996	7,679,350	5,192,143	2,792,003	7,970,976	5,413,394
NTTA System (NCTCOG)	2,720,288	7,739,958	5,433,846	2,831,961	8,090,241	5,692,159

For review of each model year's basic, service, and retail employment breakdowns, RDS used each iteration's shares provided by NCTCOG. RDS staff then reviewed these totals and adjusted the data over time using quantitative theory and professional judgment. Overall, RDS' recommended shares are very close to the shares proposed by NCTCOG, as shown in Table 18. Looking forward, the service sector is expected to gain in overall share of total employment, while the basic sector will see a slow decline. Retail sector change will remain relatively flat.

Table 18: NTTA System AOI Basic, Service and Retail Employment Shares NCTCOG and RDS (2017– 2040)

Percentage of Employment by Sector in AOI						
	RDS			NCTCOG		
Year	Basic	Retail	Service	Basic	Retail	Service
2017	24.4%	9.5%	66.1%	23.1%	9.4%	67.5%
2027	22.0%	10.1%	67.9%	21.3%	9.3%	69.4%
2037	20.7%	10.2%	69.1%	20.0%	9.1%	70.9%
2040	20.4%	10.2%	69.4%	19.7%	9.1%	71.2%

Figures 16 and 17 illustrate total household and employment growth by TAP zone in the NTTA System AOI from 2017 to 2040.

Figure 15: RDS Household Growth 2017-2040

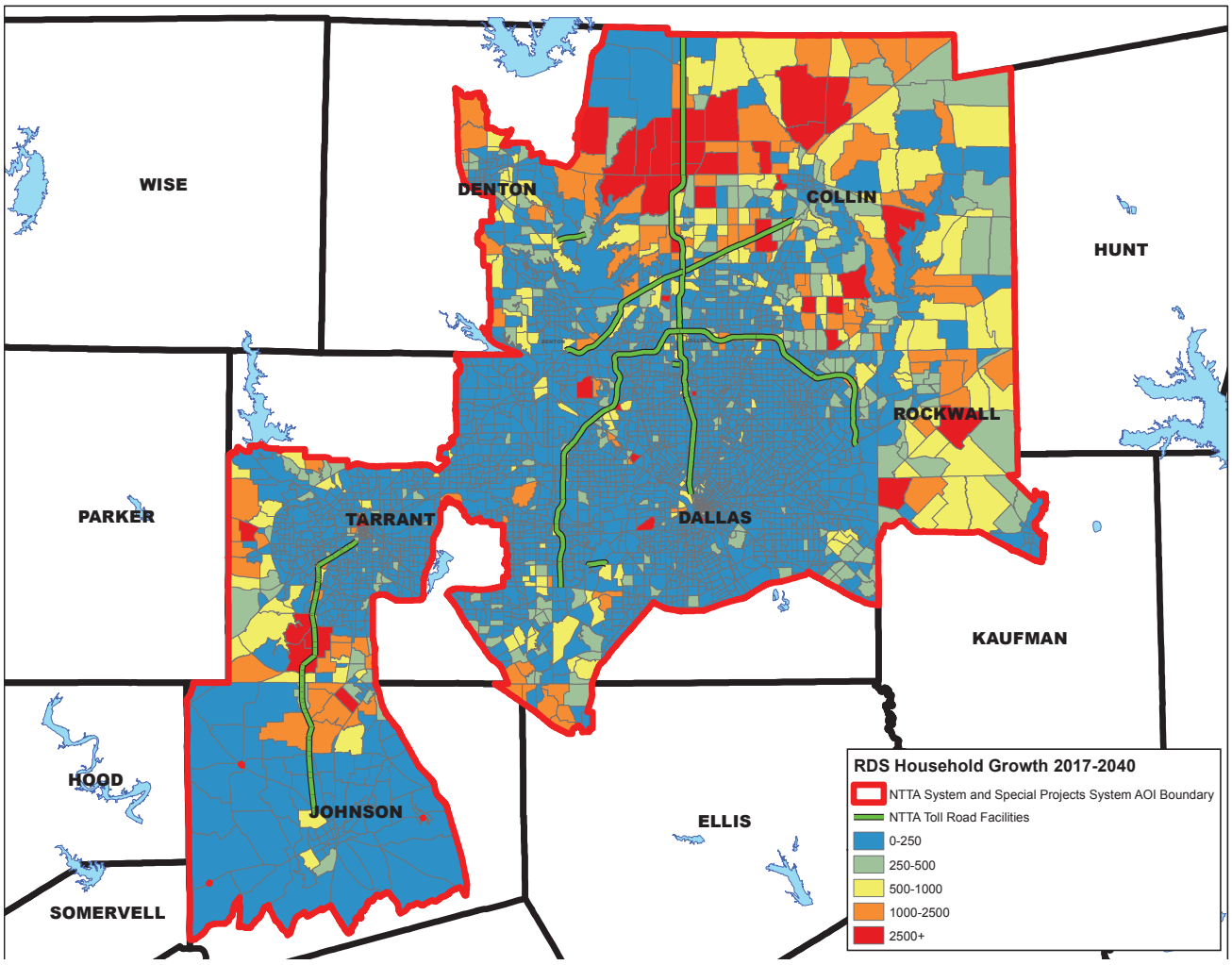
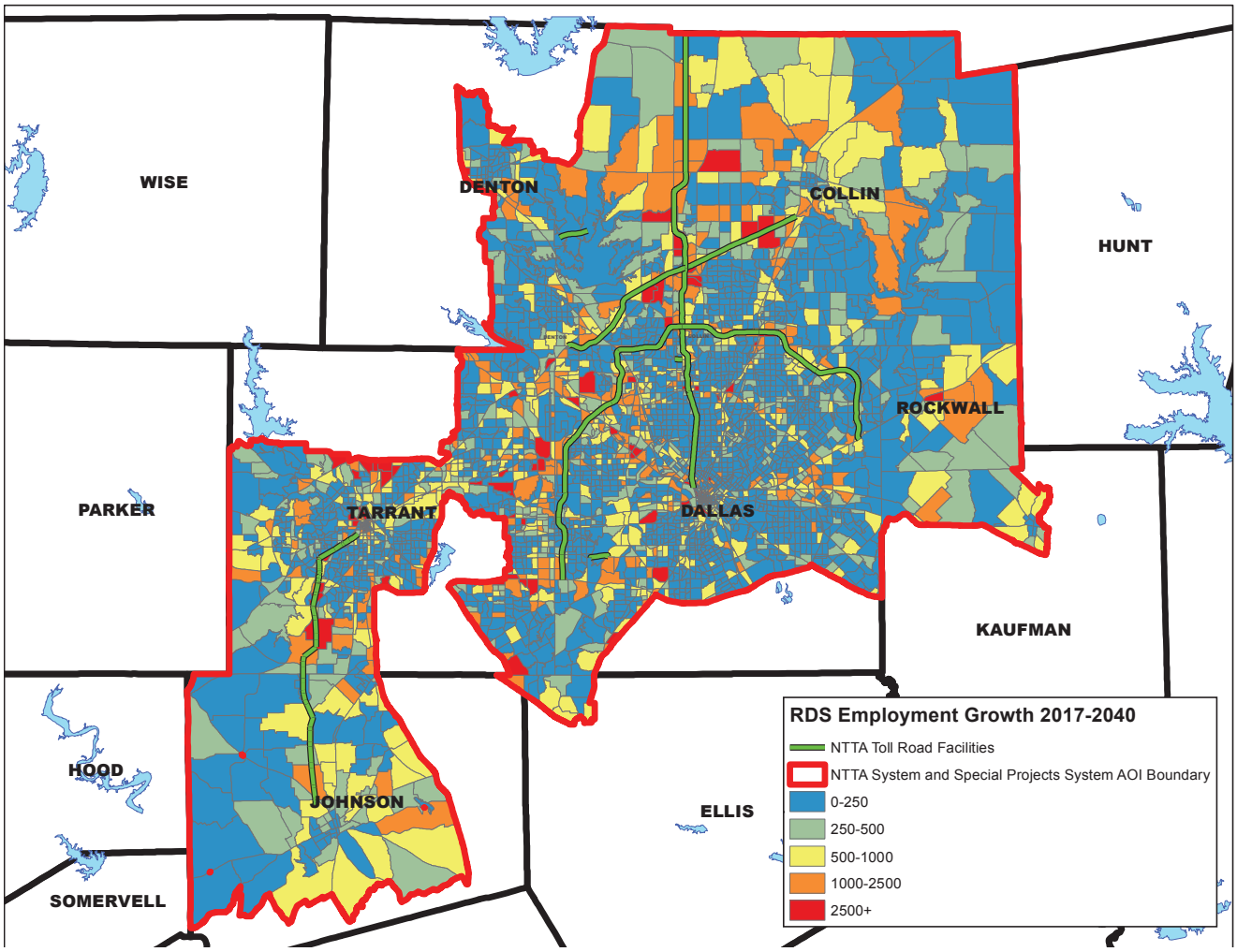


Figure 16: RDS Employment Growth 2017-2040



Special generators are employers with unique traffic patterns that generate high traffic volumes on a consistent or event-driven basis. Most of these special generators are universities, hospitals, and malls. NCTCOG examines each of these to ensure correct geographical location and then assigns each an accurate employment total. Here is a list of special generators located within the AOI. Each of these was taken into account when TAP zone totals were calculated to ensure proper traffic volumes.

Special Generator	Type
DFW Airport	Airport
Love Field Airport	Airport
Walls Regional Hospital	Hospital
Medical Center of Lewisville	Hospital
Trinity Medical Center	Hospital
Presybyterian Hospital of Plano	Hospital
Baylor Regional Medical Center at Plano	Hospital
Medical Center of Plano	Hospital
Kindred Hospital Fort Worth (Southwest)	Hospital
Harris Methodist Southwest Hospital	Hospital
John Peter Smith Hospital	Hospital
UNT Health Science Center	Hospital
Osteopathic Med. Ctr. Of Texas	Hospital
Plaza Medical Center	Hospital
Baylor All Saints Episcopal Hospital	Hospital
Harris Methodist Fort Worth & Cook Chil	Hospital
D/FW Medical Center	Hospital
Northeast Community Hospital	Hospital
Harris Methodist HEB Hospital	Hospital
North Hills Hospital	Hospital
Baylor University Medical Center at Gra	Hospital
Denton Community Hospital	Hospital
Doctors Hospital	Hospital
Richardson Regional Medical Center	Hospital
Plano Rehabilitation Hospital	Hospital
Veterans Admin. Medical Center	Hospital
Methodist Medical Center	Hospital
Las Colinas Medical Center	Hospital
RHD Memorial Medical Center	Hospital
Healthsouth Medical Center	Hospital
St. Paul Medical Center	Hospital
Baylor Health Center at Irving	Hospital
UT SW MedCtr & Children's MedCtr of Dal	Hospital
Texas Scottish Rite Hospital	Hospital
Texas A&M HSC/Baylor Collg Dent	Hospital
Baylor Institute for Rehabilitation	Hospital
Baylor University Medical Center	Hospital
Presybyterian Hospital (in Dallas)	Hospital

Special Generator	Type
Medical City Dallas Hospital	Hospital
Garland Community Hospital	Hospital
The Medical Center of Mesquite	Hospital
Lake Pointe Medical Center	Hospital
Mesquite Community Hospital	Hospital
Baylor Medical Center of Garland	Hospital
Medical Center of Mckinney	Hospital
Columbia Medical Center of Mckinney	Hospital
Vista Ridge Mall	Regional Shopping Mall
Irving Mall	Regional Shopping Mall
The Shops at Willowbend	Regional Shopping Mall
Hulen Mall	Regional Shopping Mall
Ridgmar Mall	Regional Shopping Mall
La Gran Plaza De Fort Worth	Regional Shopping Mall
Festival Discount Mall-Closed	Regional Shopping Mall
Six Flags Mall	Regional Shopping Mall
Northeast Mall	Regional Shopping Mall
Grapevine Mills Mall	Regional Shopping Mall
Golden Triangle Mall	Regional Shopping Mall
Collin Creek Mall	Regional Shopping Mall
Southwest Center	Regional Shopping Mall
Northpark Center	Regional Shopping Mall
Valley View Mall-Closed	Regional Shopping Mall
Prestonwood Town Center-Closed	Regional Shopping Mall
Galleria Mall	Regional Shopping Mall
Fire Wheel Mall	Regional Shopping Mall
Town East Mall	Regional Shopping Mall
Richardson Square Mall	Regional Shopping Mall
Stonebriar Mall	Regional Shopping Mall
Texas Christian University	University/College_Type A
Texas Woman's University	University/College_Type A
University Of North Texas	University/College_Type A
Southern Methodist University	University/College_Type A
Spring Creek Campus	University/College_Type B
Southwest Baptist Theological Sem.	University/College_Type B
TCC--South Campus	University/College_Type B
Texas Wesleyan University	University/College_Type B
TCC--Northwest Campus	University/College_Type B
TCC--Southeast Campus	University/College_Type B
TCC--Northeast Campus	University/College_Type B
Univ. of Texas at Dallas	University/College_Type B
Richland College	University/College_Type B
Dallas Baptist University	University/College_Type B
Mountain View College	University/College_Type B
University of Dallas	University/College_Type B

Special Generator	Type
North Lake Junior College	University/College_Type B
El Centro College	University/College_Type B
Brookhaven Junior College	University/College_Type B
Eastfield College	University/College_Type B
The Mesquite Metroplex Center	University/College_Type B
CCCC - Preston Ridge Campus	University/College_Type B
CCCC - Central Park Campus	University/College_Type B

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
2013	Denton	0	0	0	0	0
2016	Denton	0	0	0	0	0
2018	Denton	0	0	0	0	0
2030	Denton	0	0	0	0	0
2050	Denton	0	0	0	0	0
2061	Denton	3198	262	639	4538	8637
2067	Denton	508	9	37	150	704
2070	Denton	0	0	0	0	0
2071	Denton	0	0	0	0	0
2074	Denton	0	0	0	0	0
2075	Denton	0	0	0	653	653
2076	Denton	0	14	86	180	280
2077	Denton	0	0	0	0	0
2078	Denton	0	0	0	0	0
2079	Denton	0	0	0	0	0
2080	Denton	0	0	0	0	0
2081	Denton	0	0	0	0	0
2082	Denton	0	0	0	0	0
2084	Denton	0	6	34	0	40
2095	Denton	0	0	0	101	101
2098	Denton	0	0	0	0	0
2100	Denton	0	0	0	0	0
2102	Denton	0	0	0	0	0
2106	Denton	0	0	0	0	0
2107	Denton	0	0	0	251	251
2109	Denton	0	0	0	0	0
2110	Denton	0	0	0	0	0
2112	Denton	144	2	4	1433	1583
2124	Denton	0	0	0	0	0
2125	Denton	0	0	0	0	0
2126	Denton	0	0	0	0	0
2131	Denton	0	0	0	0	0
2134	Denton	0	0	0	0	0
2136	Denton	0	0	0	0	0
2137	Denton	0	0	0	0	0
2138	Denton	0	0	0	0	0
2141	Denton	0	0	0	0	0
2144	Denton	0	0	0	91	91
2145	Denton	74	0	6	73	153

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
2148	Denton	0	0	0	0	0
2149	Denton	0	0	0	0	0
2152	Denton	0	0	0	0	0
2155	Denton	3486	186	464	822	4958
2159	Denton	0	0	0	0	0
2162	Denton	0	0	0	0	0
2163	Denton	0	0	0	0	0
2164	Denton	0	0	0	0	0
2165	Denton	0	0	0	0	0
2167	Denton	0	0	0	0	0
2168	Denton	0	0	0	0	0
2170	Denton	0	0	0	0	0
2171	Denton	0	0	0	0	0
2173	Denton	0	0	0	0	0
2176	Denton	36	0	0	45	81
2177	Denton	0	0	0	0	0
2178	Denton	0	0	0	0	0
2179	Denton	0	0	0	344	344
2190	Denton	0	0	0	0	0
2191	Denton	0	0	0	0	0
2192	Denton	0	0	0	0	0
2193	Denton	0	0	0	0	0
2194	Denton	27	1	25	83	136
2205	Denton	17	77	123	102	319
2206	Denton	102	2	0	0	104
2207	Denton	2	0	0	8	10
2208	Denton	1476	68	113	329	1986
2210	Denton	0	0	0	0	0
2211	Denton	408	12	89	4	513
2213	Denton	1	10	44	30	85
2217	Denton	307	26	53	262	648
2218	Denton	274	8	5	65	352
2219	Denton	11	10	19	181	221
2220	Denton	20	2	1	0	23
2225	Denton	368	83	140	114	705
2226	Denton	117	42	47	50	256
2232	Denton	0	0	0	0	0
2233	Denton	0	0	86	51	137
2234	Denton	0	0	57	138	195

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
2235	Denton	0	0	0	0	0
2236	Denton	0	0	0	0	0
2239	Denton	1258	386	590	905	3139
2240	Denton	0	3	19	704	726
2245	Denton	0	0	0	0	0
2246	Denton	29	6	46	111	192
2247	Denton	196	27	1	0	224
2248	Denton	0	0	0	0	0
2249	Denton	0	0	0	16	16
2250	Denton	1125	87	538	143	1893
2251	Denton	70	5	0	106	181
2253	Denton	54	8	7	0	69
2255	Denton	673	77	344	273	1367
2256	Denton	0	0	0	0	0
2261	Denton	0	0	0	0	0
2262	Denton	342	77	109	455	983
2263	Denton	0	0	0	0	0
2264	Denton	87	2	6	0	95
2270	Denton	67	16	43	57	183
2271	Denton	0	0	0	3	3
2273	Denton	0	0	0	0	0
2276	Denton	0	0	0	0	0
2277	Denton	0	0	0	0	0
2278	Denton	0	0	0	0	0
2279	Denton	0	0	0	0	0
2280	Denton	0	0	0	0	0
2288	Denton	0	0	0	0	0
2290	Denton	122	14	2	0	138
2291	Denton	53	26	53	0	132
2292	Denton	0	0	0	0	0
2297	Denton	0	0	0	77	77
2298	Denton	51	16	59	11	137
2304	Denton	0	0	0	0	0
2305	Denton	16	0	1	0	17
2306	Denton	49	23	73	0	145
2307	Denton	0	0	0	0	0
2308	Denton	0	0	0	0	0
2309	Denton	0	0	0	0	0
2311	Denton	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
2312	Denton	0	0	0	0	0
2313	Denton	0	0	0	0	0
2314	Denton	0	0	73	452	525
2315	Denton	258	46	165	100	569
2316	Denton	618	0	8	0	626
2319	Denton	2	0	1	0	3
2320	Denton	3	8	38	156	205
2321	Denton	11	29	263	153	456
2322	Denton	0	0	0	0	0
2323	Denton	0	0	0	0	0
2325	Denton	0	0	0	0	0
2326	Denton	0	0	0	0	0
2327	Denton	0	0	0	0	0
2328	Denton	0	0	0	0	0
2331	Denton	0	0	0	0	0
2332	Denton	0	0	0	0	0
2334	Denton	0	0	0	0	0
2335	Denton	0	0	0	0	0
2336	Denton	0	0	0	0	0
2344	Denton	40	14	5	76	135
2345	Denton	0	0	0	0	0
2346	Denton	0	0	0	0	0
2347	Denton	0	0	0	0	0
2348	Denton	0	0	0	0	0
2350	Denton	0	0	0	0	0
2351	Denton	0	0	0	0	0
2352	Denton	0	0	0	4	4
2353	Denton	30	19	13	0	62
2354	Denton	0	0	0	0	0
2355	Denton	0	0	0	0	0
2356	Denton	0	0	33	0	33
2357	Denton	0	0	0	0	0
2358	Denton	0	0	0	64	64
2359	Denton	0	0	0	0	0
2360	Denton	33	1	36	0	70
2361	Denton	0	0	0	0	0
2364	Denton	27	12	25	0	64
2365	Denton	0	0	0	314	314
2366	Denton	3633	88	187	349	4257

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
2368	Denton	0	0	0	0	0
2369	Denton	0	0	0	0	0
2370	Denton	459	48	59	339	905
2371	Denton	225	24	29	171	449
2377	Denton	0	0	9	0	9
2378	Denton	117	13	11	0	141
2379	Denton	0	0	0	0	0
2380	Denton	27	27	16	0	70
2381	Denton	0	0	0	0	0
2382	Denton	0	0	0	0	0
2383	Denton	0	0	0	0	0
2384	Denton	0	0	0	0	0
2385	Denton	0	0	0	0	0
2386	Denton	0	0	0	0	0
2387	Denton	0	0	0	0	0
2388	Denton	0	0	0	0	0
2389	Denton	0	0	0	0	0
2390	Denton	0	0	0	0	0
2391	Denton	0	0	0	0	0
2392	Denton	0	0	0	0	0
2394	Denton	0	0	0	0	0
2395	Denton	0	0	0	0	0
2396	Denton	0	0	0	0	0
2398	Denton	0	0	0	0	0
2399	Denton	0	0	0	0	0
2400	Denton	0	0	0	0	0
2410	Denton	0	0	0	0	0
2411	Denton	10	0	2	22	34
2412	Denton	282	21	13	0	316
2413	Denton	9	0	3	0	12
2414	Denton	0	0	0	54	54
2415	Denton	0	0	0	0	0
2416	Denton	0	0	0	0	0
2418	Denton	84	6	0	63	153
2419	Denton	0	0	0	0	0
2422	Denton	0	0	0	0	0
2423	Denton	0	0	0	0	0
2424	Denton	0	0	0	46	46
2425	Denton	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
2426	Denton	0	0	0	0	0
2427	Denton	0	0	0	0	0
2428	Denton	0	0	0	0	0
2429	Denton	0	0	0	0	0
2430	Denton	0	0	0	0	0
2441	Denton	0	0	0	422	422
2442	Denton	48	16	83	35	182
2443	Denton	0	0	0	0	0
2444	Denton	0	0	0	0	0
2445	Denton	76	10	0	0	86
2446	Denton	238	39	24	75	376
2447	Denton	0	0	0	0	0
2450	Denton	0	0	0	0	0
2451	Denton	0	0	0	0	0
2452	Denton	0	0	0	0	0
2454	Denton	0	0	0	0	0
2456	Denton	0	0	0	0	0
2458	Denton	0	0	0	0	0
2459	Denton	0	0	0	0	0
3001	Collin	77	2	14	220	313
3002	Collin	533	32	41	3200	3806
3003	Collin	25	10	66	0	101
3004	Collin	12	2	17	1097	1128
3005	Collin	424	58	294	1282	2058
3006	Collin	439	62	24	682	1207
3007	Collin	0	0	0	0	0
3008	Collin	0	0	0	0	0
3009	Collin	0	0	0	0	0
3010	Collin	0	0	0	0	0
3011	Collin	0	0	0	0	0
3012	Collin	0	0	0	0	0
3013	Collin	0	0	0	0	0
3014	Collin	0	0	0	0	0
3017	Collin	0	0	0	507	507
3019	Collin	738	91	323	2369	3521
3020	Collin	0	0	0	0	0
3021	Collin	0	0	18	455	473
3022	Collin	841	144	253	6623	7861
3023	Collin	191	0	0	551	742

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3024	Collin	30	30	140	0	200
3026	Collin	36	16	18	0	70
3027	Collin	801	235	1005	3542	5583
3028	Collin	0	0	0	0	0
3029	Collin	0	0	0	0	0
3030	Collin	0	0	0	0	0
3031	Collin	449	150	392	4069	5060
3032	Collin	0	42	147	642	831
3033	Collin	206	12	341	612	1171
3034	Collin	0	0	0	0	0
3035	Collin	950	136	344	1953	3383
3036	Collin	639	78	257	331	1305
3037	Collin	228	43	95	6857	7223
3038	Collin	1383	79	620	1045	3127
3039	Collin	0	0	0	0	0
3040	Collin	0	0	0	0	0
3041	Collin	5	2	15	0	22
3042	Collin	0	0	0	0	0
3043	Collin	0	0	0	0	0
3044	Collin	1565	105	225	1178	3073
3045	Collin	127	19	8	515	669
3046	Collin	295	40	61	460	856
3047	Collin	0	0	0	504	504
3049	Collin	0	0	0	0	0
3050	Collin	0	0	0	627	627
3051	Collin	148	0	0	402	550
3052	Collin	0	0	0	0	0
3053	Collin	0	0	0	0	0
3058	Collin	682	34	95	2916	3727
3059	Collin	41	2	6	18	67
3061	Collin	0	0	0	449	449
3062	Collin	0	17	131	166	314
3063	Collin	695	249	387	1165	2496
3064	Collin	814	45	81	215	1155
3065	Collin	0	1	4	111	116
3066	Collin	36	51	131	0	218
3067	Collin	79	27	4	146	256
3068	Collin	0	0	0	0	0
3069	Collin	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3070	Collin	0	0	0	0	0
3071	Collin	0	0	0	0	0
3075	Collin	0	0	0	0	0
3076	Collin	0	0	0	0	0
3077	Collin	16	0	4	277	297
3078	Collin	3160	270	403	1366	5199
3079	Collin	1511	234	253	0	1998
3080	Collin	0	0	0	0	0
3081	Collin	0	17	107	0	124
3082	Collin	135	9	26	0	170
3083	Collin	151	10	38	0	199
3084	Collin	84	6	11	0	101
3085	Collin	0	0	0	0	0
3086	Collin	0	0	0	0	0
3087	Collin	0	0	0	0	0
3088	Collin	0	0	0	0	0
3089	Collin	0	0	0	0	0
3090	Collin	0	0	0	0	0
3092	Collin	0	0	0	0	0
3095	Collin	0	0	0	0	0
3104	Collin	0	0	0	0	0
3105	Collin	0	0	0	0	0
3106	Collin	267	3	1	166	437
3107	Collin	0	0	0	0	0
3109	Collin	0	1	33	0	34
3110	Collin	0	0	0	0	0
3111	Collin	0	0	0	0	0
3112	Collin	0	0	0	185	185
3113	Collin	188	13	24	175	400
3116	Collin	0	0	0	0	0
3120	Collin	0	0	0	0	0
3121	Collin	611	17	277	200	1105
3124	Collin	0	0	0	0	0
3125	Collin	0	0	0	0	0
3126	Collin	0	0	0	0	0
3127	Collin	0	0	0	0	0
3128	Collin	0	0	0	0	0
3129	Collin	516	76	369	1214	2175
3130	Collin	609	49	63	0	721

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3131	Collin	1532	61	145	176	1914
3132	Collin	373	98	78	45	594
3133	Collin	0	17	64	91	172
3134	Collin	0	0	0	0	0
3135	Collin	0	0	0	0	0
3136	Collin	168	21	40	0	229
3139	Collin	8	3	22	0	33
3142	Collin	0	0	0	0	0
3143	Collin	0	0	0	0	0
3144	Collin	0	0	0	0	0
3145	Collin	46	0	24	9	79
3146	Collin	0	0	0	0	0
3149	Collin	0	0	0	24	24
3152	Collin	647	52	394	852	1945
3153	Collin	0	0	0	226	226
3154	Collin	0	0	0	0	0
3155	Collin	0	0	0	0	0
3156	Collin	0	0	0	0	0
3157	Collin	55	5	52	10	122
3159	Collin	0	0	0	0	0
3160	Collin	0	0	0	14	14
3161	Collin	0	0	0	0	0
3162	Collin	7	0	3	14	24
3165	Collin	0	3	8	0	11
3166	Collin	41	6	17	0	64
3171	Collin	0	0	0	35	35
3172	Collin	0	0	0	0	0
3173	Collin	0	0	0	73	73
3174	Collin	0	7	106	0	113
3175	Collin	0	0	0	354	354
3176	Collin	67	24	3	279	373
3177	Collin	783	208	566	616	2173
3178	Collin	2368	46	103	0	2517
3179	Collin	0	0	0	0	0
3180	Collin	0	18	18	0	36
3181	Collin	34	2	5	68	109
3182	Collin	0	0	0	0	0
3183	Collin	0	0	0	28	28
3185	Collin	244	9	104	0	357

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3186	Collin	0	0	0	0	0
3187	Collin	0	0	0	85	85
3188	Collin	1324	91	241	15	1671
3189	Collin	0	0	0	0	0
3193	Collin	0	0	0	0	0
3194	Collin	43	52	83	0	178
3195	Collin	0	0	0	62	62
3196	Collin	0	0	0	88	88
3197	Collin	7	6	5	0	18
3198	Collin	17	22	36	0	75
3199	Collin	69	17	33	8	127
3201	Collin	0	0	0	0	0
3203	Collin	0	0	0	0	0
3204	Collin	0	0	0	0	0
3205	Collin	0	0	0	179	179
3206	Collin	0	0	0	0	0
3207	Collin	66	15	32	0	113
3209	Collin	0	0	0	0	0
3210	Collin	0	0	0	0	0
3213	Collin	0	0	0	0	0
3215	Collin	0	0	0	0	0
3216	Collin	0	0	0	0	0
3217	Collin	1	2	7	0	10
3218	Collin	53	2	6	0	61
3220	Collin	7	5	60	41	113
3222	Collin	0	0	0	0	0
3223	Collin	0	0	0	156	156
3224	Collin	0	0	0	75	75
3225	Collin	0	0	0	0	0
3226	Collin	359	0	0	18	377
3227	Collin	0	0	0	0	0
3229	Collin	0	0	0	0	0
3230	Collin	0	0	0	0	0
3231	Collin	84	3	1	274	362
3232	Collin	0	0	0	0	0
3235	Collin	43	5	0	0	48
3236	Collin	0	0	0	109	109
3237	Collin	0	0	0	0	0
3238	Collin	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3239	Collin	8	1	2	0	11
3240	Collin	7	14	20	0	41
3246	Collin	0	0	0	0	0
3247	Collin	0	0	0	0	0
3248	Collin	0	0	127	0	127
3249	Collin	0	0	0	0	0
3250	Collin	0	0	0	29	29
3252	Collin	0	0	0	0	0
3253	Collin	0	0	0	0	0
3254	Collin	0	0	0	0	0
3255	Collin	0	0	0	0	0
3256	Collin	0	0	0	0	0
3257	Collin	0	0	0	0	0
3258	Collin	0	0	0	0	0
3259	Collin	0	0	0	0	0
3260	Collin	0	0	0	0	0
3261	Collin	0	0	0	0	0
3262	Collin	25	52	154	250	481
3263	Collin	0	0	0	0	0
3264	Collin	0	0	0	0	0
3266	Collin	8	17	42	105	172
3267	Collin	278	2	0	278	558
3268	Collin	118	17	35	283	453
3269	Collin	137	20	109	22	288
3270	Collin	11	25	55	65	156
3272	Collin	57	12	53	144	266
3273	Collin	0	0	0	0	0
3274	Collin	215	1	1	0	217
3275	Collin	0	0	0	0	0
3276	Collin	0	0	0	0	0
3279	Collin	0	0	0	0	0
3280	Collin	0	0	0	46	46
3281	Collin	0	0	0	0	0
3282	Collin	0	0	0	0	0
3283	Collin	0	0	0	0	0
3284	Collin	0	0	0	0	0
3285	Collin	0	0	0	0	0
3286	Collin	0	0	0	0	0
3292	Collin	609	12	44	33	698

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3294	Collin	160	0	8	0	168
3295	Collin	0	0	0	0	0
3297	Collin	411	28	30	727	1196
3298	Collin	0	0	0	22	22
3299	Collin	0	0	0	0	0
3300	Collin	0	0	0	50	50
3301	Collin	0	0	0	0	0
3302	Collin	0	0	0	0	0
3303	Collin	0	0	0	0	0
3305	Collin	0	0	0	0	0
3306	Collin	0	0	0	0	0
3307	Collin	0	0	0	0	0
3308	Collin	0	0	0	0	0
3309	Collin	0	0	0	0	0
3310	Collin	0	0	0	0	0
3311	Collin	0	0	0	0	0
3312	Collin	0	0	0	0	0
3314	Collin	0	0	0	0	0
3315	Collin	0	0	0	0	0
3318	Collin	0	0	0	0	0
3320	Collin	662	36	153	63	914
3321	Collin	0	0	0	0	0
3322	Collin	0	0	0	0	0
3324	Collin	516	3	11	2180	2710
3326	Collin	100	0	1	0	101
3327	Collin	0	0	0	0	0
3328	Collin	0	0	0	0	0
3329	Collin	7	15	44	0	66
3331	Collin	0	0	0	0	0
3333	Collin	0	0	0	0	0
3334	Collin	0	0	0	0	0
3335	Collin	0	0	0	0	0
3336	Collin	0	0	0	0	0
3337	Collin	0	0	0	0	0
3338	Collin	196	12	0	332	540
3339	Collin	0	0	0	0	0
3340	Collin	0	0	0	0	0
3341	Collin	0	0	0	0	0
3342	Collin	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3343	Collin	0	0	0	0	0
3344	Collin	0	0	0	0	0
3345	Collin	0	0	0	0	0
3346	Collin	0	0	0	0	0
3347	Collin	30	6	0	0	36
3348	Collin	0	0	0	0	0
3349	Collin	0	0	0	0	0
3352	Collin	0	0	0	0	0
3354	Collin	457	3	0	318	778
3355	Collin	0	0	0	0	0
3357	Collin	0	0	0	0	0
3358	Collin	0	0	0	0	0
3359	Collin	0	0	0	0	0
3360	Collin	0	0	0	0	0
3362	Collin	0	0	0	0	0
3363	Collin	0	0	0	0	0
3365	Collin	0	0	0	0	0
3367	Collin	0	0	0	0	0
3368	Collin	0	0	0	0	0
3369	Collin	0	7	31	93	131
3370	Collin	0	0	0	0	0
3371	Collin	16	9	50	0	75
3372	Collin	0	0	0	0	0
3373	Collin	0	0	0	0	0
3374	Collin	0	0	0	0	0
3375	Collin	0	0	0	0	0
3378	Collin	0	0	0	0	0
3379	Collin	0	0	0	0	0
3380	Collin	0	0	0	0	0
3381	Collin	0	0	0	0	0
3382	Collin	0	0	0	0	0
3383	Collin	0	0	0	0	0
3384	Collin	0	0	0	0	0
3385	Collin	0	0	0	0	0
3386	Collin	0	0	0	0	0
3388	Collin	0	0	0	0	0
3390	Collin	974	23	3	0	1000
3391	Collin	123	22	6	90	241
3395	Collin	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3397	Collin	0	8	51	367	426
3399	Collin	416	8	93	1061	1578
3400	Collin	0	0	0	0	0
3402	Collin	0	0	0	0	0
3403	Collin	0	0	0	0	0
3404	Collin	0	0	0	0	0
3405	Collin	47	0	2	0	49
3407	Collin	0	0	0	243	243
3408	Collin	0	0	0	0	0
3409	Collin	0	0	0	0	0
3410	Collin	0	0	0	0	0
3411	Collin	0	0	0	0	0
3415	Collin	0	0	0	0	0
3416	Collin	0	0	0	0	0
3417	Collin	0	0	0	0	0
3418	Collin	0	0	0	0	0
3419	Collin	0	0	0	0	0
3421	Collin	0	0	0	0	0
3422	Collin	0	0	0	0	0
3423	Collin	0	0	0	0	0
3424	Collin	0	0	0	0	0
3425	Collin	0	0	0	0	0
3426	Collin	0	0	0	0	0
3427	Collin	0	0	0	0	0
3430	Collin	0	0	0	0	0
3431	Collin	0	0	0	0	0
3432	Collin	0	0	0	0	0
3433	Collin	0	0	0	0	0
3434	Collin	127	38	29	131	325
3435	Collin	3	3	28	0	34
3436	Collin	135	43	105	0	283
3437	Collin	45	17	47	157	266
3438	Collin	0	0	0	37	37
3440	Collin	921	52	73	436	1482
3441	Collin	0	0	0	0	0
3442	Collin	120	4	110	0	234
3443	Collin	36	8	181	95	320
3448	Collin	150	19	97	322	588
3449	Collin	533	34	136	641	1344

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
3452	Collin	0	0	0	0	0
3453	Collin	0	0	0	0	0
3454	Collin	0	0	0	0	0
3455	Collin	0	0	0	0	0
3458	Collin	0	0	0	0	0
3459	Collin	0	0	0	0	0
3460	Collin	0	0	0	0	0
3462	Collin	0	0	0	0	0
3463	Collin	0	0	0	0	0
3465	Collin	0	0	0	0	0
3466	Collin	34	1	3	0	38
3467	Collin	0	0	0	0	0
3468	Collin	0	0	0	0	0
3470	Collin	0	0	0	0	0
3472	Collin	0	0	0	0	0
3473	Collin	0	0	0	0	0
3474	Collin	0	0	32	0	32
3476	Collin	0	0	0	0	0
3477	Collin	1	4	30	0	35
3478	Collin	0	0	0	0	0
3480	Collin	0	0	0	0	0
3481	Collin	0	0	0	0	0
3482	Collin	0	0	0	0	0
3485	Collin	0	0	0	0	0
3486	Collin	0	0	0	771	771
5001	Rockwall	51	2	1	0	54
5002	Rockwall	0	0	0	0	0
5006	Rockwall	490	30	20	50	590
5007	Rockwall	191	0	2	245	438
5008	Rockwall	0	0	0	0	0
5009	Rockwall	958	15	19	709	1701
5011	Rockwall	461	34	109	579	1183
5013	Rockwall	1597	92	406	2386	4481
5014	Rockwall	625	24	208	43	900
5015	Rockwall	672	24	4	0	700
5016	Rockwall	217	79	30	401	727
5017	Rockwall	0	0	0	1025	1025
5018	Rockwall	12	0	3	0	15
5019	Rockwall	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
5023	Rockwall	44	11	30	11	96
5024	Rockwall	0	0	0	45	45
5025	Rockwall	441	47	24	1884	2396
5026	Rockwall	0	0	0	0	0
5027	Rockwall	0	0	0	0	0
5030	Rockwall	0	0	0	0	0
5032	Rockwall	3	1	3	0	7
5033	Rockwall	0	0	0	47	47
5034	Rockwall	61	25	81	0	167
5035	Rockwall	8	0	4	0	12
5037	Rockwall	354	1	1	0	356
5038	Rockwall	0	0	0	309	309
5039	Rockwall	250	22	99	809	1180
5040	Rockwall	333	15	153	197	698
5044	Rockwall	772	13	83	359	1227
5045	Rockwall	0	0	0	0	0
5047	Rockwall	36	5	57	105	203
5048	Rockwall	16	5	5	35	61
5049	Rockwall	515	113	429	746	1803
5053	Rockwall	285	11	51	23	370
6003	Dallas	0	0	0	0	0
6006	Dallas	161	64	130	0	355
6007	Dallas	0	0	0	0	0
6008	Dallas	0	0	0	0	0
6009	Dallas	0	0	0	0	0
6012	Dallas	8	1	0	80	89
6013	Dallas	0	0	0	0	0
6014	Dallas	0	0	0	0	0
6015	Dallas	0	0	0	0	0
6016	Dallas	0	0	0	0	0
6017	Dallas	0	0	0	0	0
6018	Dallas	88	0	0	5	93
6019	Dallas	0	0	0	0	0
6020	Dallas	0	0	0	0	0
6021	Dallas	0	0	0	0	0
6022	Dallas	0	0	0	0	0
6024	Dallas	0	0	0	0	0
6025	Dallas	0	0	0	0	0
6026	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6027	Dallas	0	0	0	0	0
6028	Dallas	0	0	0	0	0
6029	Dallas	0	0	0	0	0
6030	Dallas	0	0	0	0	0
6032	Dallas	0	0	0	0	0
6033	Dallas	0	0	0	0	0
6034	Dallas	0	0	0	0	0
6035	Dallas	0	0	0	0	0
6036	Dallas	0	0	0	0	0
6037	Dallas	0	0	0	0	0
6038	Dallas	0	0	0	0	0
6039	Dallas	0	0	0	0	0
6040	Dallas	0	0	0	0	0
6041	Dallas	0	0	0	0	0
6042	Dallas	0	0	0	0	0
6048	Dallas	0	0	0	0	0
6049	Dallas	0	9	92	0	101
6050	Dallas	0	0	0	0	0
6051	Dallas	0	0	0	0	0
6052	Dallas	0	0	0	0	0
6053	Dallas	0	0	0	0	0
6054	Dallas	0	0	0	0	0
6055	Dallas	0	16	0	116	132
6058	Dallas	0	0	0	0	0
6061	Dallas	0	0	0	6	6
6063	Dallas	0	0	0	0	0
6064	Dallas	0	0	0	0	0
6066	Dallas	0	0	0	0	0
6067	Dallas	96	12	3	31	142
6068	Dallas	0	0	42	23	65
6069	Dallas	0	0	0	0	0
6074	Dallas	0	0	0	0	0
6075	Dallas	0	0	0	0	0
6076	Dallas	1	4	5	0	10
6077	Dallas	0	0	0	3	3
6078	Dallas	0	0	0	0	0
6079	Dallas	0	0	0	0	0
6080	Dallas	0	0	0	0	0
6081	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6082	Dallas	0	0	0	0	0
6083	Dallas	0	0	0	0	0
6084	Dallas	0	0	0	0	0
6085	Dallas	0	0	0	0	0
6091	Dallas	0	0	0	0	0
6092	Dallas	0	0	0	0	0
6093	Dallas	0	0	0	0	0
6094	Dallas	0	0	0	0	0
6095	Dallas	0	0	0	0	0
6096	Dallas	0	0	0	0	0
6098	Dallas	97	18	63	0	178
6099	Dallas	0	0	0	5	5
6100	Dallas	0	0	0	0	0
6101	Dallas	0	0	0	0	0
6102	Dallas	0	0	0	0	0
6103	Dallas	0	0	0	0	0
6104	Dallas	0	0	0	0	0
6105	Dallas	0	0	0	0	0
6106	Dallas	0	0	0	0	0
6107	Dallas	0	0	0	0	0
6108	Dallas	0	0	0	0	0
6113	Dallas	0	0	0	0	0
6114	Dallas	0	0	0	0	0
6115	Dallas	5	2	6	0	13
6116	Dallas	0	0	0	0	0
6117	Dallas	0	0	0	0	0
6118	Dallas	0	0	0	0	0
6119	Dallas	0	0	0	0	0
6120	Dallas	0	0	0	0	0
6121	Dallas	0	0	0	0	0
6122	Dallas	0	0	0	0	0
6123	Dallas	0	0	0	0	0
6124	Dallas	0	0	0	0	0
6125	Dallas	0	0	0	0	0
6126	Dallas	0	0	0	0	0
6127	Dallas	0	0	0	0	0
6128	Dallas	0	0	0	0	0
6129	Dallas	0	0	0	0	0
6130	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6131	Dallas	0	0	0	0	0
6132	Dallas	0	0	0	0	0
6134	Dallas	0	0	0	0	0
6135	Dallas	0	0	0	0	0
6136	Dallas	0	0	0	365	365
6137	Dallas	0	0	0	0	0
6138	Dallas	0	0	0	0	0
6139	Dallas	0	0	0	0	0
6140	Dallas	0	0	0	0	0
6144	Dallas	372	60	26	0	458
6145	Dallas	461	29	103	0	593
6146	Dallas	0	0	0	23	23
6149	Dallas	0	0	0	0	0
6150	Dallas	0	0	0	0	0
6151	Dallas	138	14	25	12	189
6152	Dallas	0	0	22	0	22
6154	Dallas	0	0	0	0	0
6156	Dallas	0	0	0	0	0
6160	Dallas	0	0	0	0	0
6161	Dallas	0	0	0	0	0
6162	Dallas	0	0	0	0	0
6163	Dallas	0	0	0	0	0
6164	Dallas	0	0	0	0	0
6165	Dallas	0	0	0	0	0
6166	Dallas	0	0	0	0	0
6168	Dallas	0	0	0	0	0
6170	Dallas	0	0	0	0	0
6172	Dallas	0	0	0	0	0
6174	Dallas	0	0	0	0	0
6175	Dallas	0	0	0	0	0
6176	Dallas	0	0	0	0	0
6177	Dallas	0	0	0	0	0
6178	Dallas	0	0	0	0	0
6180	Dallas	0	0	0	0	0
6181	Dallas	0	0	0	0	0
6182	Dallas	0	0	0	0	0
6183	Dallas	0	0	0	0	0
6184	Dallas	0	0	0	0	0
6185	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6186	Dallas	0	0	0	0	0
6187	Dallas	0	0	0	0	0
6188	Dallas	0	0	0	0	0
6189	Dallas	1	1	1	0	3
6190	Dallas	0	0	0	0	0
6191	Dallas	0	0	0	0	0
6193	Dallas	0	0	0	0	0
6194	Dallas	0	0	0	0	0
6195	Dallas	0	0	0	0	0
6196	Dallas	0	0	0	0	0
6199	Dallas	0	0	0	0	0
6200	Dallas	0	0	0	0	0
6201	Dallas	0	0	0	0	0
6202	Dallas	0	0	0	0	0
6203	Dallas	0	0	0	0	0
6204	Dallas	0	0	0	0	0
6205	Dallas	0	0	0	0	0
6212	Dallas	0	0	0	0	0
6214	Dallas	0	0	0	0	0
6215	Dallas	0	0	0	16	16
6216	Dallas	0	0	0	0	0
6217	Dallas	0	0	0	0	0
6218	Dallas	0	0	0	0	0
6219	Dallas	0	0	0	0	0
6220	Dallas	0	0	0	0	0
6221	Dallas	0	0	0	0	0
6222	Dallas	0	0	0	0	0
6223	Dallas	0	0	0	123	123
6224	Dallas	0	13	22	0	35
6226	Dallas	0	0	0	0	0
6229	Dallas	0	0	0	0	0
6230	Dallas	82	34	4	12	132
6234	Dallas	0	0	0	0	0
6235	Dallas	0	0	0	0	0
6236	Dallas	0	0	0	0	0
6237	Dallas	0	0	0	0	0
6238	Dallas	2	1	4	0	7
6240	Dallas	0	0	0	0	0
6241	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6244	Dallas	0	0	0	0	0
6249	Dallas	0	0	0	0	0
6250	Dallas	0	0	0	0	0
6251	Dallas	0	0	0	0	0
6252	Dallas	0	0	0	0	0
6253	Dallas	0	0	0	0	0
6254	Dallas	0	0	0	0	0
6255	Dallas	0	0	0	0	0
6256	Dallas	0	0	0	0	0
6258	Dallas	0	0	0	0	0
6260	Dallas	0	1	0	0	1
6261	Dallas	0	0	0	0	0
6269	Dallas	0	0	0	0	0
6270	Dallas	0	0	0	0	0
6272	Dallas	0	0	0	0	0
6273	Dallas	0	0	0	0	0
6274	Dallas	0	0	0	0	0
6275	Dallas	0	0	0	0	0
6277	Dallas	23	0	28	60	111
6279	Dallas	0	0	0	0	0
6280	Dallas	0	1	8	0	9
6281	Dallas	1	1	0	0	2
6282	Dallas	0	0	0	0	0
6285	Dallas	0	0	0	0	0
6287	Dallas	0	0	0	0	0
6288	Dallas	0	0	0	0	0
6289	Dallas	0	0	0	0	0
6290	Dallas	0	0	0	0	0
6291	Dallas	0	0	0	0	0
6292	Dallas	0	0	0	0	0
6293	Dallas	0	0	0	0	0
6295	Dallas	0	0	0	0	0
6296	Dallas	0	0	0	0	0
6297	Dallas	175	6	3	0	184
6299	Dallas	99	33	31	0	163
6301	Dallas	0	0	0	0	0
6302	Dallas	0	0	0	0	0
6303	Dallas	0	0	0	0	0
6304	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6305	Dallas	0	0	0	0	0
6306	Dallas	0	0	0	0	0
6307	Dallas	0	0	0	0	0
6308	Dallas	0	0	0	0	0
6309	Dallas	0	0	0	0	0
6311	Dallas	0	0	0	0	0
6312	Dallas	0	0	0	0	0
6313	Dallas	0	0	0	0	0
6314	Dallas	0	0	0	0	0
6317	Dallas	0	0	0	0	0
6320	Dallas	0	0	0	0	0
6321	Dallas	0	0	0	0	0
6322	Dallas	0	0	0	0	0
6323	Dallas	0	0	0	0	0
6324	Dallas	0	0	0	0	0
6327	Dallas	0	0	0	0	0
6328	Dallas	0	0	0	120	120
6329	Dallas	0	0	0	230	230
6331	Dallas	0	0	0	89	89
6332	Dallas	0	0	0	0	0
6333	Dallas	0	0	0	0	0
6334	Dallas	0	0	0	0	0
6335	Dallas	0	0	0	0	0
6336	Dallas	0	0	0	0	0
6337	Dallas	118	5	93	0	216
6340	Dallas	0	0	0	0	0
6341	Dallas	0	0	0	0	0
6342	Dallas	0	1	0	44	45
6345	Dallas	0	0	0	0	0
6351	Dallas	6	1	1	0	8
6353	Dallas	22	0	1	0	23
6354	Dallas	0	0	0	0	0
6355	Dallas	0	0	0	0	0
6356	Dallas	0	0	0	0	0
6357	Dallas	0	0	0	0	0
6360	Dallas	2	1	0	0	3
6362	Dallas	0	0	0	0	0
6363	Dallas	0	0	0	0	0
6364	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6366	Dallas	0	0	0	0	0
6367	Dallas	0	0	0	0	0
6368	Dallas	0	0	0	0	0
6369	Dallas	0	0	0	0	0
6370	Dallas	32	2	4	0	38
6371	Dallas	3	2	1	0	6
6374	Dallas	0	0	0	0	0
6375	Dallas	3	2	9	0	14
6376	Dallas	2	0	5	0	7
6377	Dallas	0	0	1	0	1
6378	Dallas	0	0	0	0	0
6379	Dallas	0	0	0	0	0
6380	Dallas	0	0	0	0	0
6381	Dallas	0	0	0	0	0
6382	Dallas	0	0	0	0	0
6384	Dallas	0	0	0	0	0
6385	Dallas	0	0	0	0	0
6386	Dallas	0	0	0	0	0
6387	Dallas	0	0	0	0	0
6389	Dallas	0	0	0	0	0
6390	Dallas	0	0	0	10	10
6391	Dallas	0	0	0	0	0
6392	Dallas	0	0	0	0	0
6393	Dallas	0	0	0	0	0
6394	Dallas	0	0	0	0	0
6395	Dallas	0	0	0	0	0
6396	Dallas	0	0	0	0	0
6397	Dallas	0	0	0	0	0
6398	Dallas	0	0	0	0	0
6399	Dallas	0	0	0	0	0
6400	Dallas	0	0	0	0	0
6401	Dallas	0	0	0	0	0
6402	Dallas	0	0	0	0	0
6403	Dallas	0	0	0	578	578
6404	Dallas	0	0	0	0	0
6405	Dallas	0	0	0	0	0
6406	Dallas	0	0	0	0	0
6407	Dallas	0	0	0	0	0
6408	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6409	Dallas	0	0	0	0	0
6410	Dallas	0	0	0	0	0
6411	Dallas	0	0	0	0	0
6412	Dallas	0	0	0	0	0
6413	Dallas	0	0	0	0	0
6414	Dallas	0	0	0	0	0
6415	Dallas	0	0	0	0	0
6416	Dallas	0	0	0	0	0
6417	Dallas	0	0	0	0	0
6418	Dallas	0	0	0	130	130
6419	Dallas	0	0	0	0	0
6420	Dallas	0	0	0	0	0
6422	Dallas	306	60	64	0	430
6424	Dallas	0	0	0	0	0
6425	Dallas	0	0	0	178	178
6427	Dallas	0	0	0	0	0
6428	Dallas	111	81	264	170	626
6429	Dallas	0	0	0	206	206
6430	Dallas	0	17	60	0	77
6431	Dallas	0	0	0	0	0
6432	Dallas	310	48	41	0	399
6433	Dallas	0	0	0	0	0
6434	Dallas	0	0	0	0	0
6435	Dallas	268	0	0	118	386
6438	Dallas	0	0	0	0	0
6439	Dallas	0	0	0	536	536
6440	Dallas	0	0	0	0	0
6441	Dallas	0	0	0	0	0
6442	Dallas	0	0	0	0	0
6443	Dallas	0	0	0	0	0
6444	Dallas	0	0	0	0	0
6448	Dallas	0	0	0	0	0
6450	Dallas	0	0	0	25	25
6451	Dallas	0	0	0	0	0
6452	Dallas	0	0	1	0	1
6454	Dallas	0	0	0	0	0
6456	Dallas	0	0	0	0	0
6457	Dallas	0	0	0	0	0
6460	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6461	Dallas	14	1	2	0	17
6463	Dallas	2	2	0	0	4
6465	Dallas	0	0	0	0	0
6466	Dallas	0	0	0	0	0
6467	Dallas	2	1	0	0	3
6468	Dallas	49	6	2	0	57
6470	Dallas	48	14	4	0	66
6471	Dallas	37	10	6	0	53
6472	Dallas	6	11	24	0	41
6477	Dallas	0	0	0	0	0
6478	Dallas	0	0	0	0	0
6479	Dallas	34	9	6	0	49
6480	Dallas	0	0	0	0	0
6481	Dallas	2	1	1	0	4
6482	Dallas	0	0	0	0	0
6483	Dallas	0	0	0	0	0
6484	Dallas	0	0	0	0	0
6486	Dallas	0	0	0	0	0
6488	Dallas	0	0	0	0	0
6489	Dallas	0	0	0	0	0
6490	Dallas	0	0	0	0	0
6491	Dallas	0	0	0	0	0
6492	Dallas	0	0	0	0	0
6493	Dallas	0	0	0	0	0
6494	Dallas	0	0	0	0	0
6495	Dallas	0	0	0	0	0
6498	Dallas	0	0	0	0	0
6499	Dallas	0	0	0	0	0
6500	Dallas	0	0	0	0	0
6501	Dallas	0	0	0	0	0
6502	Dallas	0	0	0	0	0
6508	Dallas	0	0	0	0	0
6509	Dallas	0	0	0	0	0
6510	Dallas	0	0	0	0	0
6511	Dallas	0	0	0	0	0
6512	Dallas	0	0	0	0	0
6513	Dallas	0	0	0	0	0
6514	Dallas	0	0	0	0	0
6515	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6518	Dallas	0	0	0	0	0
6519	Dallas	0	0	0	0	0
6520	Dallas	0	0	0	0	0
6521	Dallas	0	0	0	0	0
6528	Dallas	0	0	0	0	0
6530	Dallas	0	0	0	0	0
6538	Dallas	0	0	0	0	0
6539	Dallas	145	42	62	0	249
6540	Dallas	0	0	0	0	0
6541	Dallas	0	0	0	0	0
6542	Dallas	0	0	0	0	0
6543	Dallas	0	0	0	0	0
6544	Dallas	0	0	0	0	0
6545	Dallas	187	36	0	0	223
6546	Dallas	0	0	0	0	0
6547	Dallas	0	0	20	38	58
6548	Dallas	0	0	0	70	70
6549	Dallas	0	0	0	0	0
6550	Dallas	0	0	0	0	0
6551	Dallas	0	0	0	0	0
6552	Dallas	0	0	0	0	0
6553	Dallas	0	0	0	0	0
6554	Dallas	0	0	0	0	0
6555	Dallas	0	0	0	0	0
6556	Dallas	0	0	0	0	0
6557	Dallas	0	0	0	0	0
6560	Dallas	0	0	0	0	0
6561	Dallas	0	1	2	0	3
6563	Dallas	0	0	1	0	1
6564	Dallas	1	2	1	0	4
6566	Dallas	2	2	2	0	6
6568	Dallas	2	2	1	0	5
6569	Dallas	11	6	3	0	20
6575	Dallas	1	1	1	0	3
6576	Dallas	16	4	2	0	22
6577	Dallas	8	0	2	0	10
6578	Dallas	85	14	14	0	113
6579	Dallas	66	8	4	0	78
6580	Dallas	9	4	0	0	13

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6585	Dallas	0	0	31	0	31
6586	Dallas	0	0	0	0	0
6588	Dallas	0	24	146	128	298
6589	Dallas	0	0	0	0	0
6590	Dallas	0	0	0	0	0
6591	Dallas	0	0	0	0	0
6592	Dallas	0	1	0	0	1
6593	Dallas	0	0	0	0	0
6594	Dallas	0	0	0	0	0
6595	Dallas	0	0	0	0	0
6598	Dallas	0	0	0	0	0
6599	Dallas	0	0	0	0	0
6600	Dallas	0	0	0	0	0
6601	Dallas	0	0	0	0	0
6602	Dallas	0	0	0	0	0
6603	Dallas	0	0	0	0	0
6604	Dallas	0	0	0	0	0
6605	Dallas	0	0	0	0	0
6606	Dallas	0	0	0	0	0
6609	Dallas	0	0	0	0	0
6615	Dallas	0	0	0	0	0
6616	Dallas	0	0	0	0	0
6617	Dallas	0	0	0	0	0
6619	Dallas	0	0	0	0	0
6621	Dallas	0	0	0	0	0
6624	Dallas	0	0	0	0	0
6627	Dallas	124	0	0	38	162
6628	Dallas	137	9	2	11	159
6631	Dallas	0	0	0	0	0
6633	Dallas	0	0	0	0	0
6635	Dallas	2	1	5	0	8
6636	Dallas	47	25	23	76	171
6637	Dallas	0	0	0	0	0
6638	Dallas	0	0	0	0	0
6639	Dallas	7	52	78	0	137
6640	Dallas	0	0	0	0	0
6642	Dallas	0	0	0	0	0
6643	Dallas	0	0	0	0	0
6644	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6645	Dallas	0	0	0	0	0
6646	Dallas	80	1	7	0	88
6647	Dallas	0	0	0	0	0
6648	Dallas	0	0	0	0	0
6649	Dallas	0	0	0	0	0
6650	Dallas	0	0	0	0	0
6651	Dallas	0	0	0	0	0
6652	Dallas	0	0	0	0	0
6653	Dallas	0	0	0	0	0
6654	Dallas	0	0	0	0	0
6655	Dallas	0	0	0	0	0
6656	Dallas	0	0	0	0	0
6657	Dallas	0	0	0	0	0
6658	Dallas	0	0	0	0	0
6659	Dallas	0	0	0	12	12
6660	Dallas	0	0	0	0	0
6662	Dallas	0	0	0	0	0
6663	Dallas	0	0	0	0	0
6664	Dallas	21	6	3	1	31
6665	Dallas	3	5	0	0	8
6667	Dallas	24	9	2	1	36
6669	Dallas	41	15	7	0	63
6674	Dallas	1	2	0	0	3
6675	Dallas	3	0	3	0	6
6676	Dallas	36	7	6	0	49
6677	Dallas	18	6	0	0	24
6679	Dallas	53	7	8	2	70
6680	Dallas	96	14	8	2	120
6681	Dallas	0	0	0	0	0
6682	Dallas	1	1	0	0	2
6683	Dallas	0	0	0	0	0
6684	Dallas	0	0	0	0	0
6685	Dallas	0	0	0	0	0
6686	Dallas	0	0	0	0	0
6687	Dallas	0	0	0	0	0
6689	Dallas	0	0	0	0	0
6691	Dallas	0	0	0	0	0
6692	Dallas	33	3	1	17	54
6693	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6694	Dallas	0	0	0	51	51
6695	Dallas	0	0	0	0	0
6696	Dallas	0	0	0	0	0
6697	Dallas	0	0	0	0	0
6698	Dallas	0	0	0	0	0
6699	Dallas	10	3	1	1	15
6700	Dallas	0	1	0	0	1
6701	Dallas	0	0	0	0	0
6702	Dallas	0	0	0	0	0
6703	Dallas	0	0	0	0	0
6704	Dallas	0	0	0	0	0
6705	Dallas	0	0	0	0	0
6706	Dallas	0	0	1	0	1
6708	Dallas	0	0	0	0	0
6709	Dallas	0	0	0	0	0
6710	Dallas	0	0	0	0	0
6718	Dallas	0	0	0	0	0
6719	Dallas	0	0	0	0	0
6720	Dallas	0	0	0	0	0
6721	Dallas	0	0	0	0	0
6723	Dallas	227	45	17	157	446
6727	Dallas	0	0	0	0	0
6728	Dallas	0	0	0	0	0
6730	Dallas	117	8	18	0	143
6732	Dallas	6	10	13	0	29
6733	Dallas	102	2	6	95	205
6735	Dallas	0	0	0	0	0
6737	Dallas	520	5	15	0	540
6738	Dallas	0	0	0	0	0
6739	Dallas	0	0	0	0	0
6740	Dallas	37	46	49	0	132
6741	Dallas	0	0	0	0	0
6742	Dallas	5	15	40	0	60
6743	Dallas	0	0	0	0	0
6744	Dallas	0	0	0	0	0
6745	Dallas	0	0	0	0	0
6747	Dallas	0	0	0	0	0
6751	Dallas	0	0	0	0	0
6752	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6753	Dallas	0	0	0	0	0
6755	Dallas	0	0	0	0	0
6756	Dallas	0	0	0	0	0
6757	Dallas	0	0	0	0	0
6758	Dallas	0	0	0	0	0
6759	Dallas	0	0	0	0	0
6760	Dallas	0	0	0	0	0
6762	Dallas	0	0	0	0	0
6763	Dallas	0	0	0	0	0
6764	Dallas	0	0	0	0	0
6767	Dallas	0	0	0	0	0
6776	Dallas	0	0	0	0	0
6777	Dallas	0	0	2	0	2
6778	Dallas	0	0	0	0	0
6781	Dallas	54	5	3	0	62
6785	Dallas	0	0	0	0	0
6786	Dallas	0	0	0	0	0
6787	Dallas	38	7	5	3	53
6788	Dallas	0	0	0	0	0
6789	Dallas	0	0	0	0	0
6790	Dallas	0	0	0	0	0
6791	Dallas	0	0	0	0	0
6795	Dallas	0	0	0	0	0
6796	Dallas	0	0	0	0	0
6797	Dallas	0	0	0	0	0
6798	Dallas	0	0	0	0	0
6799	Dallas	0	0	0	0	0
6800	Dallas	0	0	0	0	0
6803	Dallas	0	0	0	0	0
6804	Dallas	16	1	3	0	20
6805	Dallas	0	0	0	0	0
6806	Dallas	0	0	0	0	0
6807	Dallas	0	0	0	0	0
6808	Dallas	4	2	0	0	6
6809	Dallas	0	0	0	17	17
6810	Dallas	56	17	7	0	80
6811	Dallas	0	0	0	0	0
6812	Dallas	0	0	0	0	0
6813	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6814	Dallas	0	0	0	0	0
6815	Dallas	0	0	0	0	0
6816	Dallas	0	0	0	0	0
6821	Dallas	0	0	0	0	0
6823	Dallas	0	0	0	0	0
6825	Dallas	0	0	0	0	0
6826	Dallas	0	0	0	0	0
6828	Dallas	0	0	0	0	0
6830	Dallas	0	0	0	0	0
6831	Dallas	0	0	0	0	0
6832	Dallas	0	0	0	0	0
6834	Dallas	0	0	0	0	0
6835	Dallas	0	0	0	0	0
6836	Dallas	0	0	0	0	0
6838	Dallas	0	0	0	0	0
6841	Dallas	0	0	0	0	0
6845	Dallas	0	0	0	0	0
6846	Dallas	0	0	0	0	0
6847	Dallas	0	0	0	0	0
6848	Dallas	0	0	0	0	0
6849	Dallas	0	0	0	0	0
6853	Dallas	0	0	0	0	0
6856	Dallas	0	0	0	0	0
6859	Dallas	0	0	0	0	0
6860	Dallas	195	1	63	0	259
6861	Dallas	0	0	0	0	0
6862	Dallas	0	0	0	0	0
6863	Dallas	0	0	0	0	0
6864	Dallas	0	0	0	0	0
6865	Dallas	0	0	0	0	0
6868	Dallas	0	0	0	0	0
6870	Dallas	0	0	0	0	0
6871	Dallas	0	0	0	0	0
6872	Dallas	0	0	0	0	0
6873	Dallas	0	0	0	0	0
6876	Dallas	0	0	0	0	0
6878	Dallas	5	0	2	0	7
6879	Dallas	72	10	11	1	94
6880	Dallas	6	3	8	1	18

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6883	Dallas	8	8	4	9	29
6884	Dallas	29	14	0	0	43
6885	Dallas	56	9	3	0	68
6886	Dallas	20	7	0	2	29
6887	Dallas	65	6	8	2	81
6889	Dallas	0	0	0	0	0
6891	Dallas	0	0	0	0	0
6893	Dallas	21	20	2	4	47
6894	Dallas	35	8	2	0	45
6895	Dallas	75	7	6	1	89
6897	Dallas	48	8	1	0	57
6898	Dallas	0	4	0	0	4
6899	Dallas	3	2	1	0	6
6900	Dallas	42	3	3	0	48
6901	Dallas	0	0	0	0	0
6902	Dallas	0	0	0	0	0
6903	Dallas	0	0	0	0	0
6906	Dallas	0	0	0	0	0
6907	Dallas	2	2	2	0	6
6908	Dallas	0	0	0	0	0
6912	Dallas	3	0	1	0	4
6913	Dallas	19	11	9	0	39
6918	Dallas	9	3	2	0	14
6921	Dallas	13	2	9	1	25
6922	Dallas	0	0	1	0	1
6923	Dallas	0	0	0	0	0
6924	Dallas	0	0	0	0	0
6925	Dallas	0	0	0	0	0
6928	Dallas	0	0	0	0	0
6929	Dallas	0	0	0	0	0
6930	Dallas	0	0	0	0	0
6932	Dallas	0	0	0	0	0
6933	Dallas	0	0	0	0	0
6934	Dallas	0	0	0	0	0
6935	Dallas	0	0	0	0	0
6937	Dallas	0	0	0	0	0
6940	Dallas	0	0	0	0	0
6941	Dallas	0	0	0	0	0
6942	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6943	Dallas	0	0	0	0	0
6944	Dallas	90	31	68	0	189
6945	Dallas	0	0	0	0	0
6947	Dallas	0	0	0	0	0
6948	Dallas	89	3	47	0	139
6949	Dallas	0	0	0	0	0
6950	Dallas	0	0	0	0	0
6951	Dallas	0	0	0	0	0
6952	Dallas	0	0	0	0	0
6953	Dallas	0	0	0	0	0
6954	Dallas	0	0	0	0	0
6956	Dallas	0	0	0	0	0
6957	Dallas	0	0	0	0	0
6958	Dallas	0	0	0	0	0
6959	Dallas	0	0	0	0	0
6960	Dallas	0	0	0	0	0
6962	Dallas	0	0	0	0	0
6963	Dallas	0	0	0	0	0
6965	Dallas	0	0	0	0	0
6966	Dallas	0	0	0	0	0
6968	Dallas	0	0	0	7	7
6970	Dallas	0	0	0	0	0
6972	Dallas	0	0	0	0	0
6973	Dallas	0	0	0	0	0
6975	Dallas	0	0	0	9	9
6977	Dallas	0	0	0	0	0
6978	Dallas	0	0	0	0	0
6979	Dallas	0	0	0	0	0
6980	Dallas	0	0	0	0	0
6981	Dallas	0	0	0	95	95
6982	Dallas	0	0	0	0	0
6983	Dallas	0	0	0	0	0
6984	Dallas	0	0	0	0	0
6985	Dallas	0	0	0	0	0
6986	Dallas	0	0	0	0	0
6987	Dallas	0	0	0	0	0
6988	Dallas	0	0	0	0	0
6989	Dallas	0	0	0	0	0
6990	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
6991	Dallas	0	0	0	0	0
6992	Dallas	0	0	0	0	0
6994	Dallas	2	3	10	0	15
6995	Dallas	0	0	0	0	0
6996	Dallas	21	5	11	4	41
6998	Dallas	13	10	4	1	28
6999	Dallas	0	1	1	0	2
7001	Dallas	71	12	9	5	97
7008	Dallas	13	20	0	2	35
7010	Dallas	0	0	0	0	0
7011	Dallas	36	3	4	0	43
7012	Dallas	5	2	3	0	10
7013	Dallas	35	19	42	0	96
7014	Dallas	0	0	0	0	0
7016	Dallas	0	0	0	0	0
7017	Dallas	50	4	1	0	55
7019	Dallas	0	0	0	0	0
7020	Dallas	2	1	2	0	5
7022	Dallas	28	4	0	0	32
7025	Dallas	76	11	1	1	89
7028	Dallas	65	9	2	1	77
7030	Dallas	0	6	24	0	30
7032	Dallas	1	1	2	1	5
7033	Dallas	0	0	0	0	0
7034	Dallas	0	0	1	0	1
7035	Dallas	0	0	0	0	0
7036	Dallas	0	0	0	0	0
7037	Dallas	0	0	0	0	0
7038	Dallas	0	0	0	0	0
7040	Dallas	0	0	0	0	0
7041	Dallas	0	0	0	0	0
7042	Dallas	0	0	0	0	0
7046	Dallas	0	0	0	0	0
7049	Dallas	0	0	0	0	0
7050	Dallas	0	0	0	0	0
7051	Dallas	0	0	0	0	0
7052	Dallas	0	0	0	0	0
7053	Dallas	0	0	0	0	0
7054	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7055	Dallas	0	0	0	33	33
7056	Dallas	18	0	2	0	20
7057	Dallas	57	0	8	70	135
7062	Dallas	0	0	0	0	0
7063	Dallas	0	0	0	0	0
7064	Dallas	0	0	0	22	22
7065	Dallas	0	0	0	0	0
7069	Dallas	0	0	0	0	0
7071	Dallas	0	0	0	0	0
7072	Dallas	0	0	0	0	0
7076	Dallas	0	0	0	0	0
7077	Dallas	0	2	3	0	5
7078	Dallas	0	0	0	0	0
7079	Dallas	0	0	0	0	0
7084	Dallas	0	0	0	0	0
7088	Dallas	0	0	0	0	0
7090	Dallas	0	0	0	0	0
7093	Dallas	0	0	0	0	0
7094	Dallas	0	0	0	0	0
7095	Dallas	0	0	0	0	0
7096	Dallas	0	0	0	0	0
7097	Dallas	0	0	0	0	0
7098	Dallas	0	0	0	0	0
7099	Dallas	0	0	0	0	0
7100	Dallas	0	0	0	0	0
7101	Dallas	0	0	0	0	0
7103	Dallas	0	0	0	0	0
7104	Dallas	0	0	0	0	0
7105	Dallas	0	0	0	0	0
7106	Dallas	8	1	2	1	12
7107	Dallas	0	0	2	0	2
7108	Dallas	0	0	0	0	0
7109	Dallas	21	2	12	33	68
7112	Dallas	0	0	0	0	0
7114	Dallas	12	8	8	1	29
7115	Dallas	7	2	2	9	20
7117	Dallas	18	2	5	2	27
7120	Dallas	8	5	6	0	19
7121	Dallas	37	36	6	2	81

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7122	Dallas	4	0	2	5	11
7123	Dallas	0	0	0	0	0
7124	Dallas	0	0	0	0	0
7125	Dallas	51	11	18	40	120
7126	Dallas	0	0	0	0	0
7128	Dallas	62	3	6	2	73
7130	Dallas	67	9	6	1	83
7131	Dallas	16	2	1	1	20
7132	Dallas	9	37	0	0	46
7133	Dallas	76	7	3	1	87
7134	Dallas	22	1	4	1	28
7135	Dallas	49	4	3	0	56
7138	Dallas	2	1	1	0	4
7140	Dallas	15	2	1	0	18
7141	Dallas	0	0	0	0	0
7144	Dallas	56	8	10	0	74
7145	Dallas	14	1	4	0	19
7147	Dallas	0	0	0	0	0
7151	Dallas	0	0	0	0	0
7153	Dallas	0	0	0	0	0
7154	Dallas	0	0	0	8	8
7157	Dallas	0	0	0	0	0
7159	Dallas	0	0	0	0	0
7161	Dallas	0	0	0	0	0
7162	Dallas	0	0	0	0	0
7164	Dallas	0	0	0	0	0
7165	Dallas	0	0	0	67	67
7166	Dallas	0	0	0	0	0
7167	Dallas	0	0	0	0	0
7168	Dallas	0	0	0	0	0
7169	Dallas	0	0	0	0	0
7170	Dallas	0	0	0	0	0
7176	Dallas	0	0	0	0	0
7177	Dallas	0	0	0	0	0
7178	Dallas	0	0	0	35	35
7179	Dallas	0	0	0	0	0
7180	Dallas	0	0	0	4	4
7182	Dallas	0	0	0	0	0
7183	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7188	Dallas	0	0	0	0	0
7189	Dallas	0	0	0	0	0
7190	Dallas	0	0	0	0	0
7191	Dallas	0	0	0	0	0
7192	Dallas	0	0	0	0	0
7194	Dallas	0	0	0	0	0
7201	Dallas	0	0	8	0	8
7207	Dallas	0	0	0	0	0
7210	Dallas	0	0	0	0	0
7214	Dallas	0	0	0	0	0
7216	Dallas	0	0	0	3	3
7217	Dallas	0	0	0	0	0
7218	Dallas	0	0	0	0	0
7219	Dallas	0	0	0	0	0
7220	Dallas	0	0	0	0	0
7221	Dallas	0	0	0	0	0
7222	Dallas	0	0	0	0	0
7224	Dallas	0	0	0	0	0
7226	Dallas	0	0	0	0	0
7227	Dallas	0	0	0	0	0
7229	Dallas	0	0	0	0	0
7231	Dallas	0	0	0	0	0
7233	Dallas	0	0	0	0	0
7235	Dallas	0	0	0	0	0
7238	Dallas	8	1	4	30	43
7241	Dallas	33	1	0	0	34
7249	Dallas	4	0	4	2	10
7250	Dallas	0	0	0	0	0
7251	Dallas	0	1	0	0	1
7252	Dallas	0	0	0	2	2
7253	Dallas	0	0	0	0	0
7254	Dallas	0	0	0	0	0
7255	Dallas	0	0	0	0	0
7257	Dallas	0	0	2	0	2
7258	Dallas	43	27	39	2	111
7259	Dallas	43	38	53	0	134
7262	Dallas	28	27	11	8	74
7263	Dallas	0	0	0	0	0
7264	Dallas	0	11	0	54	65

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7265	Dallas	0	0	0	0	0
7266	Dallas	9	30	0	47	86
7267	Dallas	56	37	12	21	126
7268	Dallas	18	59	25	9	111
7271	Dallas	0	1	1	0	2
7273	Dallas	1	2	0	1	4
7274	Dallas	0	0	0	0	0
7275	Dallas	0	0	0	0	0
7276	Dallas	0	0	0	0	0
7277	Dallas	0	2	1	0	3
7278	Dallas	33	6	2	0	41
7283	Dallas	78	16	4	1	99
7285	Dallas	0	0	0	0	0
7288	Dallas	0	0	0	0	0
7289	Dallas	0	0	0	0	0
7290	Dallas	0	0	0	0	0
7291	Dallas	0	0	0	0	0
7295	Dallas	0	0	0	0	0
7296	Dallas	0	0	0	0	0
7297	Dallas	0	0	0	0	0
7298	Dallas	0	0	0	0	0
7299	Dallas	0	0	0	0	0
7301	Dallas	0	0	0	0	0
7302	Dallas	0	0	0	0	0
7303	Dallas	0	0	0	0	0
7305	Dallas	0	0	0	0	0
7306	Dallas	0	0	0	0	0
7307	Dallas	0	0	0	0	0
7310	Dallas	0	0	0	0	0
7311	Dallas	320	15	1	263	599
7312	Dallas	30	1	30	34	95
7315	Dallas	0	0	0	0	0
7318	Dallas	0	0	0	0	0
7319	Dallas	0	0	0	0	0
7321	Dallas	0	0	0	3	3
7322	Dallas	0	0	0	0	0
7323	Dallas	32	0	4	0	36
7324	Dallas	0	0	0	0	0
7325	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7326	Dallas	8	1	3	0	12
7329	Dallas	0	0	0	0	0
7330	Dallas	0	0	0	0	0
7331	Dallas	0	0	0	0	0
7342	Dallas	0	0	0	0	0
7347	Dallas	0	0	0	0	0
7349	Dallas	0	0	0	0	0
7351	Dallas	0	0	0	0	0
7353	Dallas	0	0	0	0	0
7354	Dallas	0	0	0	0	0
7356	Dallas	0	0	0	0	0
7358	Dallas	0	0	0	0	0
7359	Dallas	96	4	0	150	250
7362	Dallas	0	0	0	0	0
7364	Dallas	0	0	0	0	0
7375	Dallas	0	0	0	0	0
7376	Dallas	41	1	6	0	48
7379	Dallas	18	2	2	31	53
7384	Dallas	8	0	0	30	38
7385	Dallas	0	0	0	0	0
7389	Dallas	0	0	0	0	0
7390	Dallas	0	0	0	26	26
7391	Dallas	0	0	0	0	0
7393	Dallas	0	0	0	0	0
7394	Dallas	0	0	7	0	7
7397	Dallas	0	0	0	0	0
7399	Dallas	0	0	0	0	0
7400	Dallas	0	1	6	0	7
7402	Dallas	0	0	0	0	0
7404	Dallas	0	0	9	0	9
7405	Dallas	0	0	0	0	0
7406	Dallas	0	0	0	0	0
7408	Dallas	0	0	0	0	0
7412	Dallas	0	0	0	0	0
7414	Dallas	0	0	0	0	0
7416	Dallas	0	0	0	0	0
7417	Dallas	0	0	0	0	0
7418	Dallas	0	0	0	0	0
7419	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7420	Dallas	0	0	0	0	0
7422	Dallas	0	0	0	0	0
7423	Dallas	0	0	0	0	0
7424	Dallas	0	0	0	0	0
7425	Dallas	0	0	0	0	0
7426	Dallas	0	0	0	0	0
7427	Dallas	0	0	0	0	0
7429	Dallas	0	0	0	0	0
7431	Dallas	0	0	0	0	0
7433	Dallas	0	0	0	0	0
7434	Dallas	0	0	0	0	0
7435	Dallas	0	0	0	0	0
7436	Dallas	0	0	0	0	0
7437	Dallas	0	0	0	0	0
7439	Dallas	0	0	0	0	0
7441	Dallas	0	0	0	0	0
7442	Dallas	0	0	0	0	0
7444	Dallas	0	0	0	0	0
7451	Dallas	0	0	0	0	0
7453	Dallas	0	0	0	0	0
7463	Dallas	0	0	0	0	0
7467	Dallas	0	0	0	0	0
7468	Dallas	0	0	0	0	0
7472	Dallas	0	0	0	0	0
7473	Dallas	67	0	4	0	71
7474	Dallas	0	0	0	0	0
7479	Dallas	0	3	2	0	5
7481	Dallas	0	10	12	307	329
7482	Dallas	0	0	0	0	0
7488	Dallas	0	0	0	0	0
7490	Dallas	0	0	0	0	0
7491	Dallas	0	0	0	0	0
7492	Dallas	0	0	0	0	0
7494	Dallas	0	0	0	0	0
7495	Dallas	0	0	0	0	0
7496	Dallas	0	0	0	0	0
7505	Dallas	0	0	0	0	0
7518	Dallas	0	0	0	0	0
7531	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7538	Dallas	0	0	0	0	0
7544	Dallas	0	0	0	0	0
7551	Dallas	0	0	0	0	0
7558	Dallas	0	0	0	0	0
7559	Dallas	0	0	0	0	0
7561	Dallas	0	0	0	0	0
7565	Dallas	0	0	0	0	0
7566	Dallas	0	0	0	0	0
7569	Dallas	0	0	0	0	0
7572	Dallas	0	0	0	0	0
7575	Dallas	0	0	0	0	0
7578	Dallas	0	0	0	0	0
7579	Dallas	74	42	0	0	116
7580	Dallas	0	0	0	0	0
7583	Dallas	0	0	0	0	0
7584	Dallas	0	0	0	0	0
7587	Dallas	0	0	0	0	0
7590	Dallas	0	0	0	0	0
7592	Dallas	0	0	0	0	0
7594	Dallas	0	0	0	0	0
7596	Dallas	0	0	0	0	0
7598	Dallas	0	0	0	0	0
7599	Dallas	0	0	0	0	0
7600	Dallas	0	0	0	0	0
7602	Dallas	0	0	0	0	0
7607	Dallas	0	0	0	0	0
7610	Dallas	0	0	0	0	0
7611	Dallas	0	0	0	0	0
7612	Dallas	0	0	0	0	0
7616	Dallas	0	0	0	0	0
7620	Dallas	0	0	0	0	0
7622	Dallas	0	0	0	0	0
7624	Dallas	0	0	0	0	0
7625	Dallas	0	0	0	0	0
7628	Dallas	0	0	0	0	0
7629	Dallas	0	0	0	0	0
7633	Dallas	0	0	0	0	0
7636	Dallas	0	0	0	0	0
7637	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7644	Dallas	0	0	0	0	0
7654	Dallas	0	0	0	0	0
7670	Dallas	0	0	0	0	0
7684	Dallas	0	0	0	0	0
7688	Dallas	0	0	0	0	0
7690	Dallas	0	0	0	0	0
7693	Dallas	0	0	0	0	0
7695	Dallas	0	0	0	0	0
7696	Dallas	0	0	0	0	0
7699	Dallas	0	0	0	0	0
7701	Dallas	0	0	0	0	0
7702	Dallas	0	0	0	0	0
7705	Dallas	0	0	0	0	0
7706	Dallas	0	0	0	0	0
7707	Dallas	0	0	0	0	0
7708	Dallas	0	0	0	0	0
7713	Dallas	0	0	0	0	0
7714	Dallas	0	0	0	0	0
7715	Dallas	0	0	0	0	0
7717	Dallas	30	0	4	7	41
7718	Dallas	0	0	0	0	0
7719	Dallas	0	0	0	0	0
7720	Dallas	0	0	0	0	0
7721	Dallas	0	0	0	0	0
7723	Dallas	0	0	0	0	0
7727	Dallas	0	0	0	0	0
7728	Dallas	0	0	0	0	0
7732	Dallas	0	0	0	0	0
7743	Dallas	81	1	6	52	140
7744	Dallas	0	0	0	0	0
7745	Dallas	0	0	0	0	0
7752	Dallas	0	0	0	0	0
7753	Dallas	0	0	0	0	0
7754	Dallas	0	0	0	0	0
7755	Dallas	0	0	0	0	0
7756	Dallas	0	0	0	0	0
7762	Dallas	0	0	0	0	0
7763	Dallas	0	0	0	0	0
7765	Dallas	142	4	17	72	235

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7767	Dallas	8	0	5	0	13
7770	Dallas	0	0	0	0	0
7771	Dallas	0	0	0	0	0
7772	Dallas	0	0	0	0	0
7773	Dallas	0	0	0	0	0
7776	Dallas	0	0	0	0	0
7779	Dallas	0	0	0	0	0
7780	Dallas	0	0	0	0	0
7783	Dallas	0	0	0	0	0
7786	Dallas	0	0	0	0	0
7789	Dallas	0	0	0	0	0
7790	Dallas	0	0	0	0	0
7791	Dallas	12	7	12	65	96
7792	Dallas	0	0	0	0	0
7793	Dallas	0	0	0	0	0
7794	Dallas	0	0	0	0	0
7797	Dallas	0	0	0	0	0
7817	Dallas	0	0	0	0	0
7819	Dallas	0	0	0	0	0
7820	Dallas	0	12	29	0	41
7821	Dallas	0	0	0	0	0
7826	Dallas	0	0	0	0	0
7827	Dallas	6	0	8	0	14
7828	Dallas	0	0	0	0	0
7830	Dallas	0	0	0	12	12
7831	Dallas	0	0	0	0	0
7832	Dallas	0	0	0	0	0
7833	Dallas	0	0	0	0	0
7836	Dallas	0	0	0	0	0
7838	Dallas	0	0	0	0	0
7840	Dallas	0	0	0	0	0
7841	Dallas	0	0	0	0	0
7843	Dallas	0	0	0	0	0
7845	Dallas	0	0	0	0	0
7846	Dallas	0	0	0	0	0
7847	Dallas	0	0	0	0	0
7848	Dallas	0	0	0	0	0
7850	Dallas	0	0	0	0	0
7851	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7855	Dallas	0	0	0	0	0
7859	Dallas	0	0	0	0	0
7863	Dallas	0	0	0	0	0
7864	Dallas	0	0	0	0	0
7867	Dallas	0	0	0	0	0
7868	Dallas	0	0	0	0	0
7874	Dallas	40	0	9	0	49
7880	Dallas	0	0	0	3	3
7882	Dallas	38	0	33	0	71
7883	Dallas	163	30	30	0	223
7884	Dallas	0	0	0	0	0
7885	Dallas	0	0	0	0	0
7887	Dallas	0	0	0	0	0
7893	Dallas	0	0	0	0	0
7901	Dallas	0	0	0	0	0
7903	Dallas	0	0	0	0	0
7907	Dallas	0	0	0	0	0
7909	Dallas	0	0	0	0	0
7911	Dallas	0	0	0	0	0
7912	Dallas	0	0	0	0	0
7913	Dallas	0	0	0	0	0
7915	Dallas	0	0	0	0	0
7916	Dallas	0	0	0	0	0
7917	Dallas	0	0	0	0	0
7918	Dallas	0	0	0	0	0
7919	Dallas	0	0	0	0	0
7920	Dallas	0	0	0	0	0
7921	Dallas	0	0	0	0	0
7922	Dallas	3	0	8	0	11
7923	Dallas	0	0	0	0	0
7927	Dallas	0	0	0	0	0
7928	Dallas	0	0	0	0	0
7929	Dallas	0	0	0	0	0
7930	Dallas	0	0	0	0	0
7931	Dallas	0	0	0	0	0
7932	Dallas	0	0	0	0	0
7933	Dallas	0	0	0	0	0
7934	Dallas	0	0	0	0	0
7940	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
7943	Dallas	0	0	0	0	0
7944	Dallas	0	0	0	0	0
7946	Dallas	0	0	0	36	36
7948	Dallas	0	0	0	0	0
7949	Dallas	0	0	0	40	40
7950	Dallas	0	0	0	0	0
7953	Dallas	27	23	33	60	143
7956	Dallas	19	12	0	0	31
7958	Dallas	0	0	0	0	0
7960	Dallas	39	17	4	0	60
7961	Dallas	0	0	0	0	0
7962	Dallas	0	4	0	17	21
7963	Dallas	0	0	0	0	0
7966	Dallas	0	0	0	0	0
7969	Dallas	0	0	0	0	0
7970	Dallas	8	0	14	0	22
7974	Dallas	0	0	0	0	0
7978	Dallas	0	0	0	0	0
7979	Dallas	0	0	0	0	0
7982	Dallas	0	20	29	0	49
7983	Dallas	0	0	0	0	0
7987	Dallas	0	0	0	0	0
7989	Dallas	0	0	0	0	0
7995	Dallas	0	0	0	0	0
7998	Dallas	0	0	0	0	0
7999	Dallas	0	0	0	0	0
8001	Dallas	0	0	0	0	0
8005	Dallas	0	0	0	0	0
8006	Dallas	0	0	0	0	0
8007	Dallas	0	0	0	0	0
8008	Dallas	0	0	0	0	0
8009	Dallas	0	0	0	0	0
8010	Dallas	0	0	0	0	0
8011	Dallas	0	0	0	0	0
8012	Dallas	0	0	0	0	0
8013	Dallas	0	0	0	0	0
8014	Dallas	0	0	0	0	0
8015	Dallas	0	0	0	0	0
8016	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
8021	Dallas	0	0	0	0	0
8022	Dallas	187	2	28	0	217
8023	Dallas	0	0	0	0	0
8025	Dallas	0	0	0	7	7
8026	Dallas	0	0	0	0	0
8027	Dallas	0	0	0	0	0
8028	Dallas	0	0	0	0	0
8030	Dallas	0	0	0	0	0
8031	Dallas	0	0	0	0	0
8032	Dallas	0	0	0	0	0
8033	Dallas	0	0	0	0	0
8035	Dallas	0	0	0	0	0
8038	Dallas	0	0	0	2900	2900
8041	Dallas	0	0	0	0	0
8043	Dallas	82	0	0	119	201
8044	Dallas	119	5	0	0	124
8045	Dallas	0	0	0	5	5
8046	Dallas	0	0	0	0	0
8047	Dallas	0	0	0	0	0
8048	Dallas	0	0	0	0	0
8049	Dallas	0	0	0	0	0
8050	Dallas	0	0	0	0	0
8053	Dallas	0	0	0	0	0
8054	Dallas	0	0	0	0	0
8057	Dallas	0	0	0	0	0
8058	Dallas	0	0	0	0	0
8061	Dallas	0	0	0	0	0
8064	Dallas	0	0	0	0	0
8067	Dallas	156	0	0	49	205
8068	Dallas	0	0	0	0	0
8069	Dallas	0	0	0	0	0
8076	Dallas	115	0	0	116	231
8077	Dallas	0	0	0	0	0
8078	Dallas	0	0	0	0	0
8082	Dallas	0	0	0	0	0
8084	Dallas	0	0	0	0	0
8087	Dallas	0	0	0	0	0
8094	Dallas	0	0	0	0	0
8095	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
8096	Dallas	0	0	0	0	0
8098	Dallas	0	0	0	0	0
8102	Dallas	0	0	0	0	0
8104	Dallas	0	0	0	0	0
8106	Dallas	0	0	0	0	0
8107	Dallas	0	0	0	0	0
8110	Dallas	0	0	0	0	0
8111	Dallas	0	0	0	0	0
8113	Dallas	0	0	0	0	0
8116	Dallas	0	0	0	0	0
8118	Dallas	0	0	0	0	0
8120	Dallas	0	0	0	0	0
8121	Dallas	0	0	0	0	0
8124	Dallas	0	0	0	0	0
8125	Dallas	0	0	0	0	0
8126	Dallas	0	0	0	0	0
8127	Dallas	0	0	0	0	0
8128	Dallas	0	0	0	0	0
8129	Dallas	0	0	0	0	0
8135	Dallas	0	0	0	0	0
8136	Dallas	0	0	0	0	0
8137	Dallas	0	0	0	0	0
8140	Dallas	0	0	0	0	0
8141	Dallas	0	0	0	0	0
8144	Dallas	0	0	0	0	0
8145	Dallas	0	0	0	0	0
8146	Dallas	0	0	0	0	0
8148	Dallas	0	0	0	0	0
8149	Dallas	0	0	0	11	11
8150	Dallas	0	0	0	0	0
8151	Dallas	0	0	0	0	0
8152	Dallas	0	0	0	26	26
8153	Dallas	0	0	0	0	0
8154	Dallas	0	0	0	0	0
8155	Dallas	2	0	6	4	12
8156	Dallas	0	0	0	0	0
8157	Dallas	0	0	0	0	0
8158	Dallas	0	0	0	0	0
8160	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
8161	Dallas	0	0	0	0	0
8162	Dallas	0	0	0	800	800
8163	Dallas	0	0	0	0	0
8166	Dallas	0	0	0	0	0
8167	Dallas	0	0	0	0	0
8168	Dallas	0	0	0	0	0
8169	Dallas	0	0	0	0	0
8170	Dallas	0	0	0	0	0
8171	Dallas	0	0	0	0	0
8172	Dallas	0	0	0	0	0
8174	Dallas	0	0	0	0	0
8177	Dallas	0	0	0	0	0
8179	Dallas	0	0	0	0	0
8180	Dallas	0	0	0	0	0
8181	Dallas	0	0	0	0	0
8182	Dallas	0	0	0	0	0
8183	Dallas	0	0	0	0	0
8184	Dallas	0	0	0	0	0
8185	Dallas	0	0	0	0	0
8187	Dallas	0	0	0	0	0
8188	Dallas	0	0	0	0	0
8189	Dallas	0	0	0	0	0
8192	Dallas	0	0	0	0	0
8193	Dallas	0	0	0	0	0
8194	Dallas	0	0	0	0	0
8196	Dallas	0	0	0	0	0
8199	Dallas	0	0	0	0	0
8210	Dallas	0	0	0	0	0
8212	Dallas	0	0	0	0	0
8214	Dallas	0	0	0	0	0
8218	Dallas	0	0	0	0	0
8220	Dallas	0	0	0	0	0
8221	Dallas	0	0	0	0	0
8222	Dallas	0	0	0	0	0
8223	Dallas	0	0	0	0	0
8224	Dallas	0	0	0	0	0
8227	Dallas	0	0	0	0	0
8229	Dallas	0	0	0	0	0
8233	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
8243	Dallas	0	0	0	0	0
8244	Dallas	0	0	0	0	0
8245	Dallas	0	0	0	0	0
8249	Dallas	0	0	0	0	0
8250	Dallas	9	1	5	18	33
8253	Dallas	0	0	0	0	0
8259	Dallas	0	0	0	0	0
8264	Dallas	0	0	0	162	162
8265	Dallas	0	0	0	0	0
8266	Dallas	0	0	0	0	0
8267	Dallas	0	0	0	0	0
8268	Dallas	0	0	0	88	88
8270	Dallas	0	0	0	0	0
8272	Dallas	0	0	0	0	0
8273	Dallas	0	0	0	0	0
8274	Dallas	0	0	0	0	0
8275	Dallas	0	0	0	0	0
8276	Dallas	0	0	0	0	0
8277	Dallas	0	0	0	0	0
8278	Dallas	0	0	0	0	0
8279	Dallas	0	0	0	0	0
8282	Dallas	115	0	119	164	398
8283	Dallas	0	0	0	0	0
8284	Dallas	99	19	19	0	137
8285	Dallas	0	0	0	0	0
8287	Dallas	0	0	0	0	0
8292	Dallas	0	0	0	0	0
8296	Dallas	318	6	4	0	328
8302	Dallas	0	0	0	0	0
8305	Dallas	0	0	0	0	0
8307	Dallas	0	0	0	0	0
8308	Dallas	0	0	0	0	0
8309	Dallas	0	0	0	0	0
8310	Dallas	0	0	0	0	0
8311	Dallas	0	0	0	0	0
8315	Dallas	0	0	0	0	0
8321	Dallas	0	0	0	0	0
8326	Dallas	0	0	0	0	0
8335	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
8336	Dallas	0	0	0	0	0
8338	Dallas	0	0	0	0	0
8339	Dallas	0	0	0	0	0
8340	Dallas	0	0	0	0	0
8341	Dallas	0	0	0	0	0
8342	Dallas	0	0	0	0	0
8348	Dallas	0	0	0	0	0
8349	Dallas	0	0	0	0	0
8351	Dallas	0	0	0	0	0
8352	Dallas	0	0	0	0	0
8353	Dallas	0	0	0	0	0
8354	Dallas	0	0	0	0	0
8355	Dallas	0	0	0	0	0
8356	Dallas	0	0	0	0	0
8357	Dallas	0	0	0	0	0
8359	Dallas	0	0	0	0	0
8362	Dallas	0	0	0	0	0
8366	Dallas	0	0	0	0	0
8371	Dallas	0	0	0	0	0
8372	Dallas	0	0	0	46	46
8373	Dallas	0	0	0	0	0
8377	Dallas	0	0	0	0	0
8378	Dallas	0	0	0	0	0
8385	Dallas	0	0	0	0	0
8387	Dallas	9	1	1	0	11
8388	Dallas	0	0	0	0	0
8389	Dallas	0	0	0	0	0
8390	Dallas	0	0	0	0	0
8392	Dallas	0	0	0	54	54
8393	Dallas	0	0	0	0	0
8397	Dallas	0	0	0	26	26
8398	Dallas	0	0	0	0	0
8399	Dallas	0	0	0	0	0
8400	Dallas	0	0	0	0	0
8401	Dallas	0	0	0	0	0
8403	Dallas	0	0	0	0	0
8404	Dallas	0	0	0	0	0
8405	Dallas	0	0	0	0	0
8406	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
8407	Dallas	0	0	0	0	0
8408	Dallas	0	0	0	0	0
8409	Dallas	0	0	0	0	0
8410	Dallas	0	0	0	0	0
8411	Dallas	0	0	0	0	0
8412	Dallas	0	0	0	0	0
8414	Dallas	0	0	0	0	0
8422	Dallas	0	0	0	0	0
8423	Dallas	0	0	0	0	0
8425	Dallas	0	0	0	0	0
8432	Dallas	0	0	0	0	0
8433	Dallas	0	0	0	0	0
8438	Dallas	232	0	49	133	414
8442	Dallas	0	0	0	0	0
8443	Dallas	0	0	0	0	0
8448	Dallas	148	30	91	343	612
8450	Dallas	0	0	0	0	0
8452	Dallas	0	0	0	0	0
8453	Dallas	0	0	0	0	0
8455	Dallas	0	0	0	0	0
8456	Dallas	0	0	0	0	0
8457	Dallas	0	0	0	0	0
8459	Dallas	0	0	0	0	0
8460	Dallas	82	0	0	143	225
8461	Dallas	0	0	0	0	0
8462	Dallas	0	0	0	0	0
8469	Dallas	0	0	0	0	0
8470	Dallas	0	0	0	0	0
8471	Dallas	0	0	0	0	0
8472	Dallas	0	0	0	0	0
8475	Dallas	0	0	0	0	0
8477	Dallas	0	0	0	0	0
8478	Dallas	0	0	0	0	0
8479	Dallas	0	0	0	0	0
8480	Dallas	0	0	0	0	0
8481	Dallas	0	0	0	0	0
8482	Dallas	0	0	0	0	0
8497	Dallas	352	0	0	231	583
8499	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
8500	Dallas	0	0	0	0	0
8501	Dallas	0	0	0	41	41
8504	Dallas	0	0	0	0	0
8505	Dallas	77	0	14	118	209
8508	Dallas	0	0	0	0	0
8510	Dallas	0	0	0	0	0
8512	Dallas	0	0	0	0	0
8517	Dallas	0	0	0	0	0
8520	Dallas	0	0	0	0	0
8521	Dallas	0	0	0	0	0
8523	Dallas	0	0	0	0	0
8524	Dallas	0	0	0	0	0
8525	Dallas	0	0	0	0	0
8528	Dallas	0	0	0	0	0
8529	Dallas	0	0	0	0	0
8530	Dallas	0	0	0	0	0
8531	Dallas	0	0	0	0	0
8532	Dallas	373	1	48	0	422
8534	Dallas	293	3	13	200	509
8536	Dallas	0	0	0	0	0
8538	Dallas	0	0	0	0	0
8556	Dallas	0	0	0	297	297
8557	Dallas	0	0	0	0	0
8559	Dallas	0	0	0	0	0
8560	Dallas	0	0	0	0	0
8561	Dallas	4	7	44	0	55
8566	Dallas	102	7	2	133	244
8570	Dallas	0	0	0	0	0
8573	Dallas	0	0	0	0	0
8574	Dallas	0	0	0	0	0
8576	Dallas	0	0	0	0	0
8579	Dallas	0	0	0	0	0
8583	Dallas	0	0	0	0	0
8584	Dallas	0	0	0	0	0
8585	Dallas	25	7	17	0	49
8586	Dallas	0	0	0	0	0
8587	Dallas	5	0	12	0	17
8588	Dallas	0	0	0	0	0
8589	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
8590	Dallas	0	0	0	0	0
8591	Dallas	0	0	0	0	0
8593	Dallas	0	0	0	0	0
8619	Dallas	0	0	0	0	0
8620	Dallas	0	0	0	0	0
8621	Dallas	0	0	0	0	0
8622	Dallas	0	0	0	0	0
8623	Dallas	0	0	0	0	0
8624	Dallas	0	0	0	0	0
8625	Dallas	0	0	0	0	0
8660	Dallas	0	0	0	0	0
8661	Dallas	0	0	0	0	0
8662	Dallas	0	0	0	0	0
8665	Dallas	0	0	0	0	0
8750	Dallas	0	0	0	0	0
8803	Dallas	0	0	0	0	0
8804	Dallas	0	0	0	0	0
8828	Dallas	0	0	0	0	0
8852	Dallas	0	0	0	0	0
8853	Dallas	0	0	0	0	0
8854	Dallas	0	0	0	0	0
8855	Dallas	0	0	0	0	0
9023	Tarrant	31	23	62	219	335
9024	Tarrant	0	0	0	33	33
9031	Tarrant	0	0	0	0	0
9049	Tarrant	31	0	2	3	36
9050	Tarrant	134	18	30	54	236
9051	Tarrant	0	8	53	40	101
9054	Tarrant	55	6	16	9	86
9056	Tarrant	0	0	0	0	0
9057	Tarrant	0	0	0	0	0
9059	Tarrant	0	0	0	0	0
9060	Tarrant	0	0	0	0	0
9061	Tarrant	0	0	0	0	0
9062	Tarrant	0	0	0	0	0
9063	Tarrant	0	0	0	0	0
9085	Tarrant	0	1	14	23	38
9087	Tarrant	4	3	3	56	66
9088	Tarrant	0	0	0	8	8

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9089	Tarrant	0	0	0	0	0
9090	Tarrant	0	0	0	0	0
9108	Tarrant	4	9	25	0	38
9109	Tarrant	0	0	0	0	0
9110	Tarrant	26	17	31	8	82
9111	Tarrant	57	9	9	87	162
9112	Tarrant	21	1	1	0	23
9116	Tarrant	0	0	0	0	0
9117	Tarrant	0	3	4	0	7
9118	Tarrant	0	0	0	0	0
9119	Tarrant	0	0	0	0	0
9141	Tarrant	74	11	21	0	106
9142	Tarrant	0	0	4	0	4
9143	Tarrant	0	0	0	0	0
9144	Tarrant	0	0	0	0	0
9148	Tarrant	0	0	0	0	0
9151	Tarrant	0	0	0	0	0
9152	Tarrant	0	0	0	0	0
9153	Tarrant	0	0	0	0	0
9154	Tarrant	0	0	0	0	0
9155	Tarrant	0	0	0	0	0
9156	Tarrant	0	0	0	0	0
9167	Tarrant	366	22	104	0	492
9168	Tarrant	33	13	27	0	73
9169	Tarrant	0	0	0	0	0
9170	Tarrant	0	0	0	0	0
9171	Tarrant	0	0	0	0	0
9172	Tarrant	0	0	0	16	16
9174	Tarrant	0	0	0	0	0
9176	Tarrant	0	0	0	0	0
9177	Tarrant	0	0	0	0	0
9178	Tarrant	0	0	0	0	0
9179	Tarrant	0	0	0	0	0
9180	Tarrant	0	0	0	0	0
9181	Tarrant	0	0	0	0	0
9197	Tarrant	17	17	36	47	117
9199	Tarrant	41	3	0	10	54
9200	Tarrant	4	1	1	4	10
9201	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9203	Tarrant	0	0	0	0	0
9204	Tarrant	0	0	0	0	0
9205	Tarrant	0	0	0	0	0
9235	Tarrant	25	11	0	0	36
9236	Tarrant	47	0	3	40	90
9237	Tarrant	15	45	196	0	256
9238	Tarrant	0	0	0	0	0
9239	Tarrant	0	0	0	66	66
9240	Tarrant	57	21	49	0	127
9242	Tarrant	0	0	0	0	0
9243	Tarrant	0	0	0	0	0
9244	Tarrant	0	0	0	0	0
9245	Tarrant	0	0	0	0	0
9246	Tarrant	0	0	0	0	0
9274	Tarrant	2	2	10	0	14
9275	Tarrant	9	0	1	21	31
9276	Tarrant	0	0	0	29	29
9277	Tarrant	0	0	0	0	0
9278	Tarrant	0	0	0	0	0
9279	Tarrant	0	0	0	7	7
9280	Tarrant	0	0	0	0	0
9281	Tarrant	0	0	0	0	0
9282	Tarrant	0	0	0	0	0
9284	Tarrant	0	0	0	0	0
9286	Tarrant	0	0	0	0	0
9287	Tarrant	24	2	0	0	26
9288	Tarrant	0	0	0	0	0
9289	Tarrant	0	0	0	0	0
9290	Tarrant	0	7	1	42	50
9291	Tarrant	0	0	0	0	0
9303	Tarrant	0	0	0	0	0
9304	Tarrant	0	0	0	0	0
9326	Tarrant	419	0	22	0	441
9330	Tarrant	38	47	27	123	235
9331	Tarrant	0	0	0	0	0
9332	Tarrant	0	0	0	0	0
9333	Tarrant	0	0	0	0	0
9334	Tarrant	0	0	0	0	0
9335	Tarrant	18	7	15	0	40

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9336	Tarrant	0	0	0	0	0
9337	Tarrant	0	0	0	0	0
9338	Tarrant	0	0	0	0	0
9339	Tarrant	0	0	0	0	0
9342	Tarrant	0	0	0	0	0
9350	Tarrant	393	16	70	509	988
9359	Tarrant	0	0	0	0	0
9361	Tarrant	0	0	0	0	0
9365	Tarrant	0	0	0	0	0
9368	Tarrant	0	0	0	0	0
9372	Tarrant	0	0	0	0	0
9374	Tarrant	0	0	0	0	0
9375	Tarrant	0	0	0	16	16
9376	Tarrant	0	0	0	0	0
9377	Tarrant	0	0	0	0	0
9378	Tarrant	0	0	0	0	0
9379	Tarrant	0	0	0	0	0
9380	Tarrant	0	0	0	0	0
9381	Tarrant	0	0	0	0	0
9382	Tarrant	0	0	0	0	0
9383	Tarrant	0	0	0	0	0
9384	Tarrant	0	0	0	0	0
9385	Tarrant	0	0	0	0	0
9386	Tarrant	0	0	0	0	0
9387	Tarrant	0	0	0	0	0
9388	Tarrant	0	0	0	0	0
9389	Tarrant	0	0	0	0	0
9391	Tarrant	0	0	0	0	0
9392	Tarrant	0	0	0	0	0
9393	Tarrant	0	0	0	0	0
9394	Tarrant	0	0	0	0	0
9395	Tarrant	0	0	0	0	0
9396	Tarrant	19	21	72	0	112
9397	Tarrant	200	33	33	63	329
9398	Tarrant	0	0	0	0	0
9399	Tarrant	0	0	0	0	0
9400	Tarrant	0	0	0	0	0
9401	Tarrant	0	0	0	0	0
9402	Tarrant	61	0	4	0	65

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9403	Tarrant	38	0	18	192	248
9404	Tarrant	0	0	0	0	0
9408	Tarrant	0	0	0	0	0
9410	Tarrant	0	0	0	0	0
9412	Tarrant	0	0	0	0	0
9415	Tarrant	0	0	0	0	0
9416	Tarrant	0	0	0	0	0
9418	Tarrant	0	0	0	0	0
9419	Tarrant	0	0	0	0	0
9423	Tarrant	0	0	0	0	0
9425	Tarrant	0	0	0	0	0
9426	Tarrant	0	0	0	0	0
9428	Tarrant	0	0	0	0	0
9429	Tarrant	0	0	0	0	0
9430	Tarrant	0	0	0	0	0
9431	Tarrant	0	0	0	0	0
9432	Tarrant	0	0	0	0	0
9433	Tarrant	0	0	0	0	0
9434	Tarrant	0	0	0	0	0
9435	Tarrant	0	0	0	0	0
9436	Tarrant	0	0	0	0	0
9437	Tarrant	0	0	0	0	0
9438	Tarrant	0	0	0	0	0
9440	Tarrant	0	0	0	0	0
9442	Tarrant	0	0	0	0	0
9443	Tarrant	0	0	0	0	0
9444	Tarrant	0	0	0	0	0
9445	Tarrant	0	0	0	198	198
9446	Tarrant	22	0	1	0	23
9447	Tarrant	0	0	0	0	0
9448	Tarrant	12	2	0	0	14
9449	Tarrant	0	6	21	17	44
9450	Tarrant	0	0	0	0	0
9451	Tarrant	0	0	0	0	0
9463	Tarrant	0	0	0	0	0
9467	Tarrant	0	0	0	0	0
9470	Tarrant	0	0	0	0	0
9476	Tarrant	0	0	0	0	0
9480	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9483	Tarrant	0	0	0	0	0
9487	Tarrant	0	0	0	0	0
9488	Tarrant	0	0	0	0	0
9489	Tarrant	0	0	0	0	0
9490	Tarrant	0	0	0	0	0
9491	Tarrant	0	0	0	0	0
9492	Tarrant	0	0	0	0	0
9494	Tarrant	0	0	0	0	0
9499	Tarrant	0	0	0	0	0
9500	Tarrant	0	0	0	0	0
9501	Tarrant	0	0	18	0	18
9502	Tarrant	0	0	0	0	0
9503	Tarrant	0	0	0	0	0
9504	Tarrant	0	0	0	0	0
9505	Tarrant	0	0	0	4	4
9506	Tarrant	0	0	0	0	0
9507	Tarrant	0	0	0	0	0
9508	Tarrant	0	0	0	10	10
9509	Tarrant	95	0	0	237	332
9510	Tarrant	0	0	0	0	0
9513	Tarrant	0	0	0	0	0
9518	Tarrant	0	0	0	0	0
9522	Tarrant	0	0	0	0	0
9523	Tarrant	0	0	0	0	0
9524	Tarrant	781	131	708	3084	4704
9525	Tarrant	0	0	0	0	0
9526	Tarrant	0	0	0	0	0
9527	Tarrant	0	0	0	0	0
9528	Tarrant	0	0	0	0	0
9529	Tarrant	0	0	0	0	0
9537	Tarrant	0	0	0	0	0
9554	Tarrant	0	0	0	0	0
9555	Tarrant	0	0	0	0	0
9556	Tarrant	0	0	0	0	0
9557	Tarrant	0	0	0	0	0
9570	Tarrant	0	0	0	0	0
9571	Tarrant	0	0	0	0	0
9572	Tarrant	0	0	0	0	0
9573	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9574	Tarrant	0	0	0	0	0
9575	Tarrant	0	0	0	0	0
9576	Tarrant	0	0	0	0	0
9577	Tarrant	0	0	0	0	0
9578	Tarrant	0	0	0	0	0
9580	Tarrant	13	1	8	0	22
9584	Tarrant	0	0	0	0	0
9589	Tarrant	0	0	0	0	0
9590	Tarrant	38	0	2	0	40
9595	Tarrant	0	0	0	0	0
9596	Tarrant	0	0	0	0	0
9597	Tarrant	0	0	0	0	0
9598	Tarrant	0	0	0	0	0
9602	Tarrant	0	0	0	0	0
9604	Tarrant	0	0	0	0	0
9610	Tarrant	0	0	0	0	0
9612	Tarrant	0	0	0	0	0
9614	Tarrant	0	0	0	0	0
9617	Tarrant	0	0	0	0	0
9618	Tarrant	0	0	0	0	0
9634	Tarrant	0	0	0	0	0
9636	Tarrant	0	0	0	0	0
9638	Tarrant	0	0	0	0	0
9642	Tarrant	0	0	0	0	0
9647	Tarrant	0	0	0	0	0
9652	Tarrant	52	1	15	0	68
9655	Tarrant	0	0	0	0	0
9656	Tarrant	0	0	0	0	0
9657	Tarrant	0	0	0	0	0
9658	Tarrant	0	0	0	0	0
9659	Tarrant	0	0	0	0	0
9660	Tarrant	0	0	0	0	0
9661	Tarrant	0	0	0	0	0
9663	Tarrant	0	0	0	0	0
9664	Tarrant	16	1	1	0	18
9665	Tarrant	0	0	0	0	0
9666	Tarrant	240	18	164	2433	2855
9669	Tarrant	0	0	0	0	0
9671	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9673	Tarrant	0	0	0	0	0
9675	Tarrant	0	0	0	0	0
9676	Tarrant	0	0	0	0	0
9678	Tarrant	0	0	0	0	0
9684	Tarrant	0	0	0	0	0
9685	Tarrant	0	0	0	0	0
9686	Tarrant	0	0	0	0	0
9689	Tarrant	0	0	0	0	0
9697	Tarrant	0	0	0	0	0
9699	Tarrant	0	0	0	0	0
9705	Tarrant	0	0	0	0	0
9707	Tarrant	0	0	0	0	0
9708	Tarrant	0	0	0	0	0
9711	Tarrant	0	0	0	0	0
9713	Tarrant	0	0	0	0	0
9719	Tarrant	196	1	21	185	403
9723	Tarrant	131	9	8	34	182
9725	Tarrant	0	0	0	0	0
9726	Tarrant	0	0	0	0	0
9727	Tarrant	0	0	0	0	0
9728	Tarrant	0	0	0	5	5
9729	Tarrant	0	0	0	0	0
9730	Tarrant	0	0	0	0	0
9731	Tarrant	0	0	0	0	0
9732	Tarrant	0	0	0	0	0
9733	Tarrant	0	0	0	17	17
9734	Tarrant	0	0	0	0	0
9736	Tarrant	0	0	0	0	0
9737	Tarrant	0	0	0	0	0
9738	Tarrant	0	0	0	0	0
9740	Tarrant	0	0	0	0	0
9741	Tarrant	0	0	0	0	0
9743	Tarrant	0	0	0	0	0
9745	Tarrant	0	0	43	0	43
9746	Tarrant	0	0	0	0	0
9749	Tarrant	0	0	0	0	0
9757	Tarrant	18	28	54	6	106
9762	Tarrant	0	0	0	0	0
9763	Tarrant	63	31	35	24	153

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9765	Tarrant	0	0	0	12	12
9768	Tarrant	3	8	0	0	11
9769	Tarrant	0	0	0	0	0
9771	Tarrant	0	0	0	0	0
9783	Tarrant	0	0	0	0	0
9797	Tarrant	0	0	0	0	0
9801	Tarrant	0	0	0	0	0
9804	Tarrant	0	0	0	0	0
9807	Tarrant	0	0	0	0	0
9808	Tarrant	0	0	0	0	0
9815	Tarrant	0	0	0	0	0
9821	Tarrant	0	0	0	0	0
9828	Tarrant	0	0	0	0	0
9829	Tarrant	0	0	0	0	0
9834	Tarrant	0	0	0	0	0
9835	Tarrant	0	0	0	0	0
9837	Tarrant	0	0	0	0	0
9842	Tarrant	0	0	0	0	0
9846	Tarrant	0	0	0	0	0
9847	Tarrant	0	0	0	0	0
9853	Tarrant	0	0	0	0	0
9854	Tarrant	0	0	0	0	0
9855	Tarrant	0	0	0	0	0
9857	Tarrant	0	0	0	0	0
9858	Tarrant	0	0	0	0	0
9874	Tarrant	0	0	0	0	0
9877	Tarrant	0	0	0	18	18
9878	Tarrant	0	0	0	0	0
9900	Tarrant	0	0	0	24	24
9901	Tarrant	0	0	0	0	0
9902	Tarrant	0	0	0	0	0
9903	Tarrant	0	0	0	0	0
9904	Tarrant	0	0	0	0	0
9905	Tarrant	0	0	0	0	0
9906	Tarrant	0	0	0	0	0
9907	Tarrant	0	0	0	0	0
9908	Tarrant	0	0	0	0	0
9909	Tarrant	0	0	0	0	0
9910	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
9911	Tarrant	0	0	0	0	0
9912	Tarrant	0	0	0	0	0
9913	Tarrant	0	0	0	0	0
9914	Tarrant	0	0	0	0	0
9915	Tarrant	0	0	0	0	0
9917	Tarrant	0	0	0	0	0
9920	Tarrant	575	3	0	0	578
9921	Tarrant	0	0	0	0	0
9922	Tarrant	0	0	0	0	0
9923	Tarrant	0	0	0	0	0
9924	Tarrant	0	0	0	0	0
9926	Tarrant	0	0	0	0	0
9927	Tarrant	0	0	0	0	0
9928	Tarrant	0	0	0	0	0
9930	Tarrant	20	0	1	0	21
9933	Tarrant	0	0	0	0	0
9935	Tarrant	0	0	0	0	0
9936	Tarrant	0	0	0	0	0
9939	Tarrant	0	0	0	0	0
9943	Tarrant	0	0	0	0	0
9945	Tarrant	0	6	0	0	6
9946	Tarrant	0	0	0	0	0
9948	Tarrant	0	0	0	0	0
9949	Tarrant	0	0	0	0	0
9950	Tarrant	0	0	0	0	0
9951	Tarrant	0	0	0	0	0
9953	Tarrant	0	0	0	0	0
9963	Tarrant	0	0	0	0	0
9975	Tarrant	0	0	0	0	0
9976	Tarrant	0	0	0	0	0
9983	Tarrant	0	0	0	0	0
9984	Tarrant	0	0	0	0	0
9989	Tarrant	0	0	0	0	0
10003	Tarrant	0	0	0	0	0
10008	Tarrant	0	0	0	0	0
10012	Tarrant	0	0	0	0	0
10019	Tarrant	0	0	0	0	0
10024	Tarrant	0	0	0	0	0
10027	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10029	Tarrant	0	0	0	0	0
10031	Tarrant	0	0	0	0	0
10032	Tarrant	0	0	0	0	0
10036	Tarrant	0	0	0	0	0
10038	Tarrant	0	0	0	0	0
10039	Tarrant	0	0	0	0	0
10040	Tarrant	0	0	0	0	0
10044	Tarrant	0	0	0	0	0
10046	Tarrant	0	0	0	0	0
10051	Tarrant	0	0	0	0	0
10055	Tarrant	0	0	0	0	0
10059	Tarrant	0	0	0	0	0
10061	Tarrant	0	0	0	0	0
10063	Tarrant	0	0	0	0	0
10075	Tarrant	0	0	0	0	0
10078	Tarrant	0	0	0	0	0
10080	Tarrant	0	0	0	0	0
10081	Tarrant	0	0	0	0	0
10082	Tarrant	0	0	0	0	0
10083	Tarrant	0	0	0	0	0
10084	Tarrant	0	0	0	0	0
10085	Tarrant	0	0	0	19	19
10102	Tarrant	0	0	0	0	0
10104	Tarrant	0	0	0	0	0
10108	Tarrant	0	0	0	0	0
10109	Tarrant	0	0	0	21	21
10110	Tarrant	0	0	0	0	0
10112	Tarrant	0	0	0	0	0
10114	Tarrant	0	0	0	0	0
10118	Tarrant	0	0	0	0	0
10119	Tarrant	0	0	0	0	0
10120	Tarrant	0	0	0	0	0
10122	Tarrant	0	0	0	0	0
10126	Tarrant	0	0	0	0	0
10128	Tarrant	0	0	0	0	0
10132	Tarrant	0	0	0	0	0
10133	Tarrant	0	0	0	0	0
10134	Tarrant	0	0	0	48	48
10135	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10136	Tarrant	0	0	0	0	0
10138	Tarrant	0	0	0	0	0
10140	Tarrant	0	0	0	0	0
10141	Tarrant	0	0	0	0	0
10142	Tarrant	0	0	0	0	0
10143	Tarrant	0	0	0	0	0
10148	Tarrant	0	0	0	0	0
10149	Tarrant	55	0	0	33	88
10150	Tarrant	0	0	0	0	0
10155	Tarrant	0	0	0	0	0
10159	Tarrant	0	0	0	0	0
10160	Tarrant	0	0	0	0	0
10161	Tarrant	0	0	0	0	0
10163	Tarrant	0	0	0	0	0
10166	Tarrant	0	0	0	0	0
10170	Tarrant	0	0	0	0	0
10171	Tarrant	0	0	0	0	0
10173	Tarrant	0	0	0	0	0
10174	Tarrant	0	0	0	0	0
10177	Tarrant	0	0	0	0	0
10178	Tarrant	0	0	0	0	0
10179	Tarrant	0	0	0	0	0
10180	Tarrant	0	0	0	0	0
10182	Tarrant	0	0	0	0	0
10183	Tarrant	0	0	0	16	16
10184	Tarrant	0	0	0	0	0
10186	Tarrant	0	0	0	0	0
10187	Tarrant	0	0	0	0	0
10189	Tarrant	0	0	0	0	0
10191	Tarrant	0	0	0	0	0
10193	Tarrant	0	0	0	0	0
10201	Tarrant	0	0	0	0	0
10214	Tarrant	0	0	0	0	0
10215	Tarrant	0	0	0	0	0
10216	Tarrant	0	0	0	0	0
10217	Tarrant	0	0	0	0	0
10218	Tarrant	0	0	0	0	0
10220	Tarrant	0	0	0	0	0
10221	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10222	Tarrant	0	0	0	0	0
10224	Tarrant	0	0	0	0	0
10225	Tarrant	0	0	0	0	0
10226	Tarrant	0	0	0	0	0
10229	Tarrant	0	0	0	0	0
10234	Tarrant	0	0	0	0	0
10236	Tarrant	0	0	0	0	0
10265	Tarrant	0	0	0	0	0
10270	Tarrant	0	0	0	0	0
10271	Tarrant	0	0	0	0	0
10272	Tarrant	0	0	0	0	0
10273	Tarrant	0	0	0	0	0
10278	Tarrant	0	0	0	0	0
10280	Tarrant	0	0	0	0	0
10281	Tarrant	0	0	0	0	0
10282	Tarrant	0	0	0	0	0
10283	Tarrant	0	0	0	0	0
10284	Tarrant	0	0	0	0	0
10285	Tarrant	79	4	2	0	85
10286	Tarrant	0	0	0	0	0
10287	Tarrant	0	0	0	0	0
10298	Tarrant	0	0	0	0	0
10301	Tarrant	0	0	0	0	0
10308	Tarrant	0	0	0	0	0
10316	Tarrant	36	0	1	54	91
10318	Tarrant	0	0	0	0	0
10319	Tarrant	0	0	0	0	0
10320	Tarrant	0	0	0	0	0
10321	Tarrant	0	0	0	285	285
10322	Tarrant	0	0	0	0	0
10323	Tarrant	0	0	0	0	0
10324	Tarrant	0	0	0	0	0
10327	Tarrant	0	0	0	0	0
10329	Tarrant	0	0	0	28	28
10330	Tarrant	0	0	0	0	0
10331	Tarrant	0	0	0	0	0
10333	Tarrant	0	0	0	0	0
10336	Tarrant	0	0	0	0	0
10337	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10344	Tarrant	0	0	0	0	0
10345	Tarrant	0	0	0	0	0
10346	Tarrant	0	0	0	0	0
10347	Tarrant	103	15	114	0	232
10349	Tarrant	0	0	0	0	0
10350	Tarrant	0	0	0	0	0
10353	Tarrant	0	0	0	0	0
10354	Tarrant	0	0	0	0	0
10355	Tarrant	0	0	0	0	0
10356	Tarrant	0	0	0	0	0
10357	Tarrant	0	0	0	0	0
10360	Tarrant	0	0	0	0	0
10362	Tarrant	10	0	0	4	14
10366	Tarrant	0	0	0	0	0
10368	Tarrant	0	0	0	0	0
10374	Tarrant	0	0	0	0	0
10400	Tarrant	0	0	0	0	0
10401	Tarrant	0	0	0	0	0
10402	Tarrant	0	0	0	0	0
10403	Tarrant	0	0	0	0	0
10404	Tarrant	0	0	0	0	0
10405	Tarrant	0	0	0	0	0
10406	Tarrant	0	0	0	0	0
10407	Tarrant	0	0	0	0	0
10408	Tarrant	0	0	0	0	0
10409	Tarrant	0	0	0	0	0
10410	Tarrant	0	0	0	0	0
10411	Tarrant	0	0	0	0	0
10412	Tarrant	0	0	0	0	0
10413	Tarrant	0	0	0	0	0
10414	Tarrant	0	0	0	0	0
10415	Tarrant	0	0	0	0	0
10416	Tarrant	0	0	0	0	0
10419	Tarrant	0	0	0	0	0
10420	Tarrant	62	0	0	72	134
10421	Tarrant	0	0	0	0	0
10425	Tarrant	0	0	0	0	0
10430	Tarrant	0	0	0	0	0
10431	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10432	Tarrant	0	0	0	0	0
10433	Tarrant	0	0	0	0	0
10434	Tarrant	125	13	72	0	210
10435	Tarrant	0	0	0	0	0
10438	Tarrant	0	0	0	0	0
10451	Tarrant	0	0	0	0	0
10452	Tarrant	0	0	0	0	0
10457	Tarrant	0	0	0	0	0
10458	Tarrant	0	0	0	0	0
10459	Tarrant	0	0	0	0	0
10460	Tarrant	0	0	0	0	0
10461	Tarrant	0	0	0	0	0
10462	Tarrant	0	0	0	0	0
10464	Tarrant	0	0	0	0	0
10468	Tarrant	0	0	0	0	0
10470	Tarrant	0	0	0	0	0
10471	Tarrant	0	0	0	36	36
10472	Tarrant	0	0	0	6	6
10473	Tarrant	0	0	0	0	0
10475	Tarrant	0	0	0	5	5
10477	Tarrant	0	0	0	0	0
10497	Tarrant	0	0	0	0	0
10498	Tarrant	0	0	0	0	0
10499	Tarrant	0	0	0	0	0
10500	Tarrant	0	0	0	0	0
10501	Tarrant	0	0	0	0	0
10502	Tarrant	0	0	0	0	0
10503	Tarrant	0	0	0	0	0
10504	Tarrant	0	0	0	0	0
10505	Tarrant	0	0	0	0	0
10508	Tarrant	0	0	0	0	0
10509	Tarrant	0	0	0	0	0
10512	Tarrant	43	21	11	0	75
10513	Tarrant	0	0	0	0	0
10514	Tarrant	0	0	0	0	0
10517	Tarrant	0	0	0	0	0
10519	Tarrant	0	0	0	0	0
10520	Tarrant	0	0	0	0	0
10525	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10526	Tarrant	0	0	0	0	0
10527	Tarrant	0	0	0	0	0
10529	Tarrant	0	0	0	0	0
10530	Tarrant	0	0	0	0	0
10531	Tarrant	0	0	0	0	0
10532	Tarrant	0	0	0	0	0
10533	Tarrant	0	0	0	0	0
10534	Tarrant	0	0	0	0	0
10535	Tarrant	0	0	0	0	0
10538	Tarrant	0	0	0	0	0
10540	Tarrant	0	0	0	0	0
10550	Tarrant	0	0	0	0	0
10567	Tarrant	0	0	0	0	0
10568	Tarrant	0	0	0	0	0
10569	Tarrant	0	0	0	0	0
10570	Tarrant	0	0	0	0	0
10571	Tarrant	0	0	0	0	0
10573	Tarrant	0	0	0	0	0
10574	Tarrant	0	0	0	27	27
10575	Tarrant	0	0	0	0	0
10578	Tarrant	396	18	33	62	509
10580	Tarrant	0	0	0	0	0
10581	Tarrant	0	0	0	0	0
10582	Tarrant	0	0	0	0	0
10587	Tarrant	0	0	0	0	0
10590	Tarrant	0	0	0	0	0
10591	Tarrant	0	0	0	0	0
10593	Tarrant	0	0	0	0	0
10598	Tarrant	0	0	0	0	0
10600	Tarrant	0	0	0	0	0
10601	Tarrant	0	0	0	0	0
10604	Tarrant	0	0	0	0	0
10607	Tarrant	0	0	0	0	0
10611	Tarrant	0	0	0	0	0
10614	Tarrant	0	0	0	0	0
10619	Tarrant	0	0	0	0	0
10621	Tarrant	0	0	0	0	0
10622	Tarrant	0	0	0	0	0
10623	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10625	Tarrant	0	0	0	0	0
10626	Tarrant	0	0	0	0	0
10627	Tarrant	0	0	0	0	0
10628	Tarrant	0	0	0	0	0
10629	Tarrant	0	0	0	0	0
10630	Tarrant	0	0	0	0	0
10631	Tarrant	0	0	0	0	0
10632	Tarrant	0	0	0	0	0
10633	Tarrant	0	0	0	0	0
10634	Tarrant	0	0	0	0	0
10635	Tarrant	0	0	0	0	0
10636	Tarrant	266	2	0	20	288
10637	Tarrant	0	0	0	0	0
10638	Tarrant	0	0	0	0	0
10640	Tarrant	0	0	0	0	0
10641	Tarrant	0	0	0	0	0
10642	Tarrant	0	0	0	0	0
10643	Tarrant	0	0	0	0	0
10647	Tarrant	0	0	0	0	0
10648	Tarrant	0	0	0	0	0
10649	Tarrant	0	0	0	0	0
10651	Tarrant	0	0	0	0	0
10653	Tarrant	0	0	0	0	0
10654	Tarrant	0	0	0	0	0
10655	Tarrant	0	0	0	0	0
10656	Tarrant	333	4	0	150	487
10670	Tarrant	0	0	0	0	0
10671	Tarrant	0	0	0	0	0
10672	Tarrant	0	0	0	0	0
10673	Tarrant	0	0	0	0	0
10674	Tarrant	0	0	0	0	0
10676	Tarrant	0	0	0	0	0
10677	Tarrant	0	0	0	0	0
10678	Tarrant	0	0	0	0	0
10679	Tarrant	0	0	0	0	0
10680	Tarrant	0	0	0	0	0
10681	Tarrant	0	0	0	0	0
10682	Tarrant	0	0	0	0	0
10683	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10688	Tarrant	0	0	0	328	328
10690	Tarrant	0	0	0	0	0
10692	Tarrant	0	0	0	0	0
10695	Tarrant	0	0	0	0	0
10696	Tarrant	0	0	0	0	0
10697	Tarrant	0	0	0	0	0
10698	Tarrant	0	0	0	0	0
10699	Tarrant	0	0	0	0	0
10700	Tarrant	0	0	0	0	0
10701	Tarrant	413	20	10	0	443
10702	Tarrant	0	0	0	0	0
10717	Tarrant	0	0	0	0	0
10718	Tarrant	0	0	0	0	0
10720	Tarrant	0	0	0	0	0
10721	Tarrant	0	0	0	0	0
10722	Tarrant	0	0	0	0	0
10723	Tarrant	0	0	0	0	0
10724	Tarrant	0	0	0	0	0
10725	Tarrant	0	0	0	0	0
10726	Tarrant	0	0	0	0	0
10727	Tarrant	0	0	0	0	0
10728	Tarrant	0	0	0	0	0
10729	Tarrant	0	0	0	0	0
10730	Tarrant	339	0	0	46	385
10731	Tarrant	0	0	0	0	0
10732	Tarrant	0	0	0	0	0
10735	Tarrant	2351	48	256	3236	5891
10736	Tarrant	0	0	0	0	0
10737	Tarrant	531	2	5	0	538
10738	Tarrant	183	0	0	195	378
10741	Tarrant	289	2	0	174	465
10763	Tarrant	0	0	0	0	0
10765	Tarrant	0	0	0	0	0
10766	Tarrant	0	0	0	0	0
10767	Tarrant	0	0	0	0	0
10769	Tarrant	0	0	0	0	0
10770	Tarrant	0	0	0	0	0
10771	Tarrant	0	0	0	0	0
10772	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
10774	Tarrant	0	0	0	0	0
10776	Tarrant	279	14	104	39	436
10780	Tarrant	483	35	75	1507	2100
10781	Tarrant	0	0	0	681	681
10783	Tarrant	1108	0	4	218	1330
10794	Tarrant	0	0	0	0	0
10795	Tarrant	0	0	0	0	0
10796	Tarrant	0	0	0	0	0
10797	Tarrant	0	0	0	0	0
10798	Tarrant	0	0	0	0	0
10800	Tarrant	0	0	0	0	0
10801	Tarrant	0	0	0	0	0
10802	Tarrant	0	0	0	0	0
10806	Tarrant	417	16	52	181	666
10822	Tarrant	0	0	0	0	0
10823	Tarrant	0	0	0	0	0
10824	Tarrant	0	0	0	0	0
10826	Tarrant	0	0	0	0	0
10830	Tarrant	0	0	0	0	0
10831	Tarrant	240	1	130	136	507
10844	Tarrant	0	0	0	0	0
10846	Tarrant	0	0	0	0	0
10854	Tarrant	62	5	41	93	201
10859	Tarrant	409	6	31	0	446
10860	Tarrant	0	0	0	0	0
10861	Tarrant	964	20	15	0	999
10862	Tarrant	0	0	0	0	0
10880	Tarrant	0	0	0	0	0
10881	Tarrant	0	0	0	0	0
10885	Tarrant	469	28	38	143	678
10894	Tarrant	0	0	0	0	0
10896	Tarrant	0	0	0	0	0
10897	Tarrant	0	0	0	0	0
16002	Johnson	0	0	0	0	0
16003	Johnson	34	9	22	0	65
16005	Johnson	4	4	24	32	64
16006	Johnson	4	8	22	0	34
16007	Johnson	887	1	107	71	1066
16008	Johnson	109	2	5	0	116

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
16009	Johnson	0	0	29	0	29
16023	Johnson	0	0	0	0	0
16026	Johnson	422	24	43	501	990
16027	Johnson	0	0	0	0	0
16028	Johnson	285	30	65	345	725
16029	Johnson	0	0	0	0	0
16030	Johnson	0	0	0	0	0
16031	Johnson	0	0	0	0	0
16032	Johnson	0	0	0	0	0
16048	Johnson	0	0	0	0	0
16049	Johnson	0	0	0	0	0
16050	Johnson	109	14	15	133	271
16052	Johnson	0	0	0	0	0
16053	Johnson	211	0	0	137	348
16054	Johnson	0	0	0	0	0
16060	Johnson	0	0	0	0	0
16062	Johnson	329	15	11	447	802
16063	Johnson	17	2	48	0	67
16065	Johnson	0	0	0	0	0
16066	Johnson	0	0	0	30	30
16070	Johnson	24	1	6	118	149
16073	Johnson	0	0	0	0	0
16074	Johnson	0	0	0	0	0
16075	Johnson	0	0	0	0	0
16078	Johnson	117	4	1	29	151
16079	Johnson	0	0	0	0	0
16080	Johnson	0	0	0	0	0
16081	Johnson	0	0	0	0	0
16082	Johnson	0	0	0	29	29
16085	Johnson	0	0	0	0	0
16086	Johnson	0	0	0	0	0
16087	Johnson	0	0	0	0	0
16094	Johnson	0	0	0	0	0
16095	Johnson	0	0	0	0	0
16096	Johnson	0	0	0	0	0
16098	Johnson	0	0	0	0	0
16100	Johnson	0	0	0	0	0
16101	Johnson	0	0	0	0	0
16102	Johnson	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
16108	Johnson	0	0	0	0	0
16109	Johnson	0	0	0	0	0
16114	Johnson	0	0	0	0	0
16117	Johnson	0	0	0	0	0
16118	Johnson	0	0	0	0	0
16119	Johnson	0	0	0	0	0
16120	Johnson	0	0	0	0	0
16122	Johnson	0	0	0	0	0
16126	Johnson	0	0	0	0	0
16129	Johnson	0	0	0	0	0
16135	Johnson	0	0	0	0	0
16145	Johnson	0	0	0	0	0
16146	Johnson	0	0	0	0	0
16147	Johnson	0	0	0	0	0
16155	Johnson	0	0	0	0	0
16157	Johnson	0	0	0	0	0
16166	Johnson	0	0	0	0	0
16168	Johnson	0	0	0	0	0
17001	Ellis	0	0	0	0	0
17025	Ellis	0	0	0	0	0
17050	Ellis	0	0	0	0	0
17063	Ellis	0	0	0	0	0
17300	Ellis	0	0	0	0	0
17301	Ellis	0	0	0	0	0
18003	Kaufman	1978	26	0	921	2925
18009	Kaufman	65	4	12	0	81
18010	Kaufman	329	18	44	90	481
18012	Kaufman	1685	126	416	3313	5540
18014	Kaufman	0	0	0	202	202
18015	Kaufman	0	0	0	249	249
18017	Kaufman	44	1	0	25	70
18019	Kaufman	25	1	2	0	28
18020	Kaufman	0	0	0	0	0
18021	Kaufman	0	0	0	18	18
18022	Kaufman	0	0	0	0	0
18033	Kaufman	12	0	39	7	58
18034	Kaufman	0	0	0	0	0
18035	Kaufman	0	0	0	20	20
18036	Kaufman	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
18042	Kaufman	114	3	1	291	409
18043	Kaufman	0	0	0	0	0
30001	Collin	0	0	0	0	0
30002	Collin	0	0	0	0	0
30003	Collin	0	0	0	0	0
30004	Collin	0	0	0	0	0
30005	Collin	0	0	0	0	0
30006	Collin	0	21	66	0	87
30007	Collin	0	0	0	0	0
30008	Collin	0	0	0	0	0
30009	Collin	0	0	0	0	0
30010	Collin	0	0	0	0	0
30011	Collin	0	0	0	0	0
30012	Collin	0	0	0	0	0
30013	Collin	0	0	0	0	0
30014	Collin	0	0	0	0	0
30015	Collin	0	0	0	0	0
30016	Collin	0	0	0	0	0
30017	Collin	0	0	0	0	0
30018	Collin	0	0	0	0	0
30019	Collin	0	0	0	146	146
30020	Collin	0	0	0	0	0
30021	Collin	0	0	0	0	0
30022	Collin	0	0	0	0	0
30023	Collin	0	0	0	0	0
30024	Collin	0	0	0	0	0
30025	Dallas	0	0	0	0	0
30026	Dallas	0	0	0	0	0
30027	Dallas	0	0	0	0	0
30028	Dallas	0	0	0	0	0
30029	Dallas	0	0	0	0	0
30030	Dallas	0	0	0	16	16
30031	Dallas	0	0	0	0	0
30032	Dallas	0	0	0	0	0
30033	Dallas	57	1	0	0	58
30034	Dallas	0	0	0	0	0
30035	Rockwall	0	0	0	106	106
30036	Rockwall	0	0	0	10	10
30037	Collin	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
30038	Collin	18	0	4	0	22
30039	Dallas	0	0	9	0	9
30040	Dallas	0	0	0	39	39
30041	Dallas	0	0	0	0	0
30042	Dallas	0	0	0	0	0
30043	Dallas	0	0	0	162	162
30044	Dallas	0	0	0	0	0
30045	Dallas	0	0	0	0	0
30046	Dallas	0	0	0	53	53
30047	Dallas	0	0	0	0	0
30048	Dallas	22	0	6	0	28
30049	Dallas	0	0	0	0	0
30050	Dallas	0	0	0	0	0
30051	Dallas	0	0	0	0	0
30052	Dallas	0	0	0	0	0
30053	Dallas	0	0	0	0	0
30054	Dallas	0	0	0	0	0
30055	Dallas	0	0	0	0	0
30056	Dallas	0	0	0	0	0
30057	Dallas	0	0	0	0	0
30058	Dallas	0	0	0	0	0
30059	Dallas	0	0	0	0	0
30060	Dallas	0	0	0	0	0
30061	Dallas	0	0	0	0	0
30062	Dallas	0	0	0	0	0
30063	Dallas	0	0	0	0	0
30064	Dallas	0	0	0	0	0
30065	Dallas	0	0	0	0	0
30066	Dallas	0	0	0	0	0
30067	Dallas	0	0	0	0	0
30068	Dallas	0	0	0	0	0
30069	Dallas	0	0	0	0	0
30070	Dallas	0	0	0	0	0
30071	Dallas	0	0	0	0	0
30072	Dallas	0	0	0	0	0
30073	Dallas	0	0	0	0	0
30074	Dallas	0	0	0	0	0
30075	Dallas	0	0	0	0	0
30076	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
30077	Dallas	0	0	0	0	0
30078	Dallas	0	0	0	0	0
30079	Dallas	0	34	0	0	34
30080	Dallas	0	0	0	0	0
30081	Dallas	0	0	0	0	0
30082	Dallas	0	0	0	57	57
30083	Dallas	0	0	0	0	0
30084	Dallas	18	12	60	0	90
30085	Dallas	0	0	0	0	0
30086	Dallas	0	0	0	0	0
30087	Dallas	0	0	0	0	0
30088	Dallas	0	0	0	0	0
30089	Dallas	0	0	0	7	7
30090	Dallas	0	0	0	0	0
30091	Denton	0	0	0	0	0
30092	Denton	0	0	0	0	0
30093	Denton	0	0	0	0	0
30094	Denton	0	0	0	0	0
30095	Denton	0	0	0	0	0
30096	Denton	104	31	36	36	207
30097	Denton	0	0	0	0	0
30098	Denton	0	0	0	0	0
30099	Denton	0	0	0	0	0
30100	Collin	0	0	0	0	0
30101	Collin	0	0	0	0	0
30102	Collin	0	0	0	0	0
30103	Collin	0	0	0	0	0
30104	Collin	0	0	0	0	0
30105	Collin	0	0	0	0	0
30106	Collin	93	47	155	101	396
30108	Collin	0	0	0	35	35
30109	Collin	0	0	0	0	0
30124	Tarrant	0	0	0	0	0
30125	Tarrant	0	0	0	0	0
30128	Dallas	0	0	0	0	0
30129	Dallas	0	0	0	0	0
30130	Dallas	0	0	0	0	0
30131	Dallas	0	0	0	0	0
30132	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
30133	Dallas	6	17	19	0	42
30134	Dallas	1	1	119	0	121
30135	Dallas	1	1	18	1	21
30136	Dallas	3	8	16	8	35
30137	Dallas	6	8	8	0	22
30138	Dallas	0	0	2	13	15
30140	Dallas	154	162	0	0	316
30141	Dallas	30	45	0	0	75
30142	Dallas	0	0	0	0	0
30143	Dallas	4	66	34	5	109
30144	Dallas	0	12	0	13	25
30145	Dallas	0	0	0	0	0
30146	Dallas	0	6	0	10	16
30147	Dallas	0	0	0	0	0
30148	Dallas	0	0	0	0	0
30149	Dallas	0	0	0	0	0
30150	Dallas	0	0	0	0	0
30153	Denton	0	0	0	0	0
30154	Denton	0	0	0	318	318
30155	Denton	0	0	0	111	111
30156	Denton	0	0	0	0	0
30157	Denton	0	0	0	0	0
30158	Denton	0	0	0	0	0
30159	Denton	0	20	78	0	98
30160	Denton	0	0	0	0	0
30161	Denton	0	0	0	0	0
30162	Denton	0	0	0	0	0
30163	Denton	0	0	0	0	0
30164	Denton	0	0	0	0	0
30165	Denton	0	0	0	0	0
30166	Denton	0	0	0	0	0
30167	Tarrant	0	0	0	0	0
30168	Tarrant	0	0	0	0	0
30171	Tarrant	0	0	0	0	0
30172	Tarrant	0	0	0	0	0
30173	Dallas	7	1	0	7	15
30174	Dallas	0	0	0	0	0
30175	Dallas	0	0	0	0	0
30176	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
30177	Dallas	0	0	0	0	0
30178	Dallas	0	0	0	0	0
30179	Dallas	0	0	0	0	0
30180	Dallas	6	19	4	0	29
30181	Dallas	0	0	0	22	22
30182	Dallas	0	0	0	0	0
30183	Dallas	0	0	0	0	0
30184	Dallas	25	18	43	405	491
30185	Dallas	0	0	0	0	0
30186	Tarrant	0	0	0	0	0
30187	Tarrant	0	0	0	0	0
30188	Tarrant	0	0	0	11	11
30189	Tarrant	0	0	0	0	0
30191	Tarrant	0	0	0	0	0
30192	Tarrant	0	0	0	0	0
30193	Tarrant	0	0	0	0	0
30194	Tarrant	0	0	0	0	0
30195	Tarrant	0	0	0	0	0
30196	Tarrant	0	0	0	0	0
30197	Tarrant	0	0	0	0	0
30198	Tarrant	0	0	0	0	0
30199	Tarrant	0	0	0	0	0
30203	Tarrant	503	0	4	140	647
30204	Tarrant	0	0	0	34	34
30205	Tarrant	0	0	0	0	0
30206	Tarrant	0	0	0	0	0
30207	Dallas	137	4	10	0	151
30208	Dallas	0	0	0	0	0
30209	Dallas	0	0	0	0	0
30210	Dallas	0	0	0	28	28
30211	Tarrant	0	0	0	0	0
30212	Tarrant	0	0	0	0	0
30215	Tarrant	0	0	0	0	0
30216	Tarrant	0	0	0	0	0
30217	Tarrant	0	0	0	0	0
30218	Tarrant	0	0	0	0	0
30219	Tarrant	0	0	0	0	0
30220	Tarrant	0	0	0	0	0
30221	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
30222	Tarrant	0	0	0	0	0
30223	Tarrant	0	0	0	0	0
30224	Tarrant	0	0	0	0	0
30229	Tarrant	0	0	0	0	0
30230	Tarrant	0	0	0	0	0
30231	Denton	4	14	21	0	39
30232	Denton	0	0	0	0	0
30234	Denton	8	0	5	0	13
30235	Denton	1830	0	6	0	1836
30236	Denton	0	0	0	0	0
30237	Denton	200	1	2	47	250
30238	Dallas	0	0	0	0	0
30239	Dallas	0	0	0	0	0
30240	Dallas	0	0	0	0	0
30241	Dallas	0	0	0	0	0
30242	Dallas	0	0	0	0	0
30243	Dallas	0	0	0	0	0
30244	Dallas	0	0	0	0	0
30245	Dallas	0	0	0	0	0
30247	Collin	106	24	17	0	147
30248	Dallas	8	4	7	0	19
30250	Denton	0	0	0	0	0
30251	Tarrant	0	0	0	0	0
30252	Tarrant	0	0	0	0	0
30253	Dallas	0	0	0	0	0
30254	Dallas	0	0	0	0	0
30255	Dallas	0	0	0	0	0
30256	Dallas	0	0	0	0	0
30257	Collin	0	0	0	367	367
30258	Collin	0	0	0	0	0
30259	Dallas	0	0	0	0	0
30260	Dallas	30	0	6	0	36
30262	Collin	0	0	61	123	184
30265	Dallas	0	0	0	0	0
30266	Dallas	0	0	0	0	0
30267	Dallas	0	0	0	0	0
30268	Dallas	0	0	0	0	0
30269	Collin	0	0	0	0	0
30270	Collin	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
30271	Collin	0	0	0	0	0
30272	Collin	0	0	0	0	0
30273	Collin	0	0	0	0	0
30274	Collin	0	0	0	0	0
30275	Collin	0	0	0	0	0
30276	Denton	85	6	22	0	113
30277	Denton	0	0	105	3	108
30278	Dallas	0	0	0	0	0
30279	Dallas	0	0	0	0	0
30280	Dallas	0	0	0	0	0
30281	Dallas	0	0	0	0	0
30282	Dallas	0	0	0	0	0
30283	Dallas	0	0	0	0	0
30284	Dallas	0	0	0	0	0
30285	Dallas	0	0	0	0	0
30291	Dallas	0	0	0	0	0
30292	Dallas	0	0	0	0	0
30293	Tarrant	0	0	0	0	0
30294	Tarrant	0	0	0	0	0
30295	Denton	0	0	0	778	778
30297	Denton	0	0	0	0	0
30298	Denton	0	0	0	379	379
30300	Denton	0	0	0	0	0
40001	Dallas	0	0	0	0	0
40002	Dallas	0	0	0	0	0
40003	Dallas	0	0	0	0	0
40004	Dallas	0	0	0	0	0
40008	Denton	0	0	0	0	0
40009	Denton	113	66	168	248	595
40010	Dallas	0	0	0	0	0
40011	Dallas	0	0	0	0	0
40014	Collin	0	0	0	0	0
40015	Collin	549	12	14	27	602
40016	Collin	0	0	0	0	0
40017	Collin	0	0	0	0	0
40018	Dallas	0	0	0	0	0
40019	Dallas	0	0	0	0	0
40021	Tarrant	0	0	0	0	0
40022	Tarrant	39	7	17	31	94

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40023	Dallas	0	0	0	1	1
40024	Collin	0	0	0	0	0
40025	Collin	0	0	0	0	0
40026	Dallas	0	1	0	0	1
40027	Johnson	0	0	0	0	0
40028	Johnson	0	0	0	0	0
40030	Tarrant	0	0	0	0	0
40031	Tarrant	0	0	0	0	0
40032	Tarrant	0	0	0	0	0
40033	Dallas	0	0	0	0	0
40034	Dallas	0	0	0	0	0
40036	Dallas	0	0	0	0	0
40037	Dallas	0	0	0	0	0
40038	Dallas	0	0	0	0	0
40040	Denton	0	0	0	0	0
40041	Denton	0	0	0	0	0
40045	Denton	0	0	0	3015	3015
40046	Denton	302	137	389	4460	5288
40048	Collin	0	0	0	0	0
40050	Denton	34	0	0	40	74
40051	Denton	0	0	0	0	0
40052	Denton	35	0	0	43	78
40054	Denton	0	0	0	0	0
40055	Denton	0	0	0	0	0
40056	Denton	0	0	0	0	0
40057	Denton	0	0	0	0	0
40059	Denton	0	0	0	0	0
40060	Collin	67	0	19	110	196
40061	Dallas	0	0	0	0	0
40062	Dallas	0	0	0	0	0
40063	Dallas	0	0	0	0	0
40064	Dallas	0	0	0	0	0
40065	Dallas	1	2	0	0	3
40066	Dallas	8	3	1	0	12
40067	Dallas	1	2	1	0	4
40068	Dallas	0	1	0	0	1
40069	Dallas	72	10	6	1	89
40070	Dallas	1	1	0	0	2
40071	Dallas	52	8	5	0	65

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40072	Collin	0	0	0	0	0
40073	Collin	0	0	0	0	0
40074	Dallas	0	0	0	665	665
40075	Collin	0	0	0	0	0
40076	Collin	0	0	0	0	0
40077	Dallas	93	1	1	23	118
40078	Rockwall	133	15	46	0	194
40079	Rockwall	0	0	0	6	6
40080	Rockwall	40	7	37	42	126
40081	Rockwall	0	0	0	0	0
40083	Denton	96	0	0	88	184
40084	Denton	0	0	0	0	0
40086	Johnson	0	0	0	0	0
40091	Johnson	0	0	0	0	0
40092	Johnson	0	0	0	0	0
40094	Ellis	0	0	0	0	0
40095	Ellis	0	0	0	0	0
40104	Rockwall	786	13	71	36	906
40105	Rockwall	0	0	0	0	0
40106	Dallas	0	0	0	0	0
40107	Dallas	10	5	6	0	21
40108	Collin	72	17	32	82	203
40109	Collin	0	0	0	0	0
40110	Collin	0	0	0	0	0
40111	Collin	0	0	0	0	0
40113	Collin	0	0	0	0	0
40114	Collin	0	0	0	0	0
40115	Collin	0	0	0	0	0
40116	Collin	0	0	0	85	85
40117	Collin	0	0	0	0	0
40118	Collin	0	0	0	0	0
40119	Tarrant	0	0	0	0	0
40120	Collin	29	31	38	38	136
40121	Collin	260	30	93	0	383
40122	Denton	0	0	0	0	0
40128	Denton	0	0	0	0	0
40129	Denton	3559	147	366	986	5058
40130	Denton	2099	50	99	37	2285
40131	Denton	2	0	9	0	11

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40132	Denton	22	2	6	0	30
40133	Denton	0	0	0	0	0
40139	Dallas	0	0	0	0	0
40140	Tarrant	0	3	11	0	14
40141	Tarrant	0	0	0	0	0
40143	Tarrant	0	0	9	0	9
40144	Tarrant	0	0	0	0	0
40145	Tarrant	0	0	0	0	0
40146	Tarrant	0	0	0	0	0
40147	Tarrant	141	0	0	238	379
40148	Tarrant	1307	5	0	217	1529
40151	Tarrant	0	0	0	0	0
40152	Tarrant	0	0	0	0	0
40154	Tarrant	0	0	0	0	0
40155	Tarrant	0	0	0	0	0
40164	Tarrant	0	0	0	0	0
40165	Tarrant	0	0	0	0	0
40166	Tarrant	0	0	0	0	0
40167	Tarrant	0	0	0	0	0
40168	Tarrant	0	0	0	0	0
40169	Tarrant	0	0	0	0	0
40170	Tarrant	0	0	0	0	0
40171	Tarrant	0	0	0	0	0
40172	Tarrant	0	0	0	45	45
40173	Tarrant	0	0	0	0	0
40174	Tarrant	0	0	0	0	0
40175	Tarrant	343	6	159	0	508
40176	Tarrant	0	0	0	0	0
40177	Tarrant	0	1	8	0	9
40178	Tarrant	55	25	61	0	141
40179	Tarrant	110	0	0	121	231
40180	Tarrant	389	41	31	243	704
40181	Tarrant	0	0	0	0	0
40182	Tarrant	0	0	0	0	0
40183	Tarrant	0	0	0	0	0
40184	Tarrant	0	0	0	0	0
40185	Tarrant	0	0	0	0	0
40186	Tarrant	46	4	8	0	58
40187	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40188	Tarrant	0	0	0	0	0
40189	Tarrant	0	0	0	0	0
40190	Tarrant	0	0	0	0	0
40191	Tarrant	0	0	0	0	0
40192	Tarrant	0	0	0	0	0
40193	Tarrant	0	0	0	0	0
40194	Tarrant	0	0	0	0	0
40195	Tarrant	0	0	0	0	0
40196	Tarrant	0	0	0	0	0
40197	Tarrant	0	0	0	0	0
40198	Tarrant	0	0	0	0	0
40199	Tarrant	0	0	0	0	0
40200	Tarrant	0	0	0	0	0
40201	Tarrant	0	0	0	0	0
40202	Dallas	12	32	0	42	86
40207	Dallas	97	17	41	0	155
40208	Dallas	0	0	0	0	0
40209	Dallas	7	6	64	0	77
40210	Dallas	0	0	0	0	0
40211	Dallas	20	0	1	0	21
40212	Dallas	0	0	0	0	0
40213	Dallas	0	0	0	0	0
40214	Dallas	0	0	0	0	0
40215	Dallas	2	2	18	20	42
40216	Dallas	0	0	0	0	0
40217	Dallas	0	0	0	0	0
40218	Dallas	0	0	0	0	0
40219	Dallas	0	0	0	0	0
40220	Dallas	0	0	0	0	0
40221	Dallas	48	4	35	368	455
40223	Dallas	0	0	0	0	0
40224	Dallas	0	0	0	0	0
40225	Dallas	0	13	44	276	333
40226	Dallas	0	0	0	300	300
40227	Dallas	392	19	37	0	448
40228	Dallas	0	0	0	0	0
40229	Dallas	0	0	0	0	0
40230	Dallas	0	0	0	0	0
40231	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40232	Dallas	0	0	0	0	0
40233	Dallas	37	0	12	0	49
40234	Dallas	0	0	17	119	136
40235	Dallas	0	0	0	0	0
40236	Dallas	0	0	0	0	0
40237	Dallas	0	0	0	0	0
40238	Dallas	0	0	0	0	0
40239	Dallas	0	0	0	591	591
40240	Dallas	245	29	13	2	289
40241	Dallas	54	9	1	0	64
40242	Dallas	11	3	5	0	19
40243	Dallas	30	13	18	0	61
40245	Dallas	0	0	0	0	0
40246	Dallas	0	0	0	0	0
40247	Dallas	0	0	0	0	0
40248	Dallas	0	0	0	0	0
40249	Dallas	0	0	0	0	0
40250	Dallas	0	0	0	0	0
40251	Dallas	0	0	0	0	0
40252	Dallas	0	0	0	0	0
40259	Dallas	0	2	38	0	40
40260	Dallas	0	0	0	0	0
40261	Dallas	0	0	0	0	0
40262	Dallas	0	0	0	0	0
40263	Dallas	0	0	0	0	0
40264	Dallas	0	0	0	0	0
40265	Dallas	0	0	0	0	0
40266	Dallas	0	0	0	0	0
40267	Dallas	0	0	0	0	0
40268	Dallas	0	0	0	0	0
40269	Dallas	0	0	0	0	0
40270	Dallas	0	0	0	0	0
40271	Dallas	0	0	0	0	0
40272	Dallas	0	0	0	0	0
40273	Dallas	0	0	0	0	0
40274	Dallas	0	0	0	0	0
40275	Dallas	0	0	0	0	0
40276	Dallas	0	0	0	0	0
40278	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40279	Dallas	0	0	0	0	0
40280	Dallas	0	0	0	0	0
40281	Dallas	0	0	0	0	0
40282	Dallas	46	9	0	0	55
40283	Dallas	29	12	8	0	49
40284	Dallas	0	0	0	0	0
40285	Dallas	0	0	0	0	0
40286	Dallas	117	2	7	3	129
40287	Dallas	0	0	0	0	0
40288	Dallas	0	0	0	0	0
40289	Dallas	0	0	0	0	0
40290	Dallas	0	0	0	0	0
40291	Dallas	0	0	0	0	0
40292	Dallas	0	0	0	0	0
40293	Dallas	0	0	0	0	0
40294	Dallas	0	0	0	0	0
40295	Dallas	0	0	0	0	0
40296	Dallas	0	0	0	0	0
40297	Dallas	0	0	0	0	0
40298	Dallas	0	0	0	0	0
40299	Dallas	0	0	0	0	0
40300	Dallas	0	0	0	0	0
40301	Dallas	0	0	0	0	0
40302	Dallas	0	0	0	0	0
40303	Dallas	0	0	0	0	0
40305	Tarrant	0	0	0	0	0
40306	Tarrant	382	70	24	0	476
40310	Dallas	0	0	0	0	0
40311	Dallas	0	0	0	0	0
40312	Dallas	0	0	0	0	0
40313	Dallas	0	0	0	0	0
40314	Dallas	0	0	0	0	0
40315	Dallas	0	0	0	0	0
40316	Dallas	0	0	0	0	0
40317	Dallas	0	0	0	0	0
40318	Tarrant	0	0	0	0	0
40319	Tarrant	31	0	8	0	39
40320	Johnson	0	0	0	0	0
40321	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40324	Collin	424	114	373	960	1871
40325	Collin	0	0	0	0	0
40326	Tarrant	0	0	0	0	0
40327	Johnson	0	0	0	0	0
40328	Dallas	0	0	0	0	0
40329	Tarrant	0	0	0	1122	1122
40330	Tarrant	0	0	0	0	0
40331	Tarrant	0	0	0	0	0
40332	Johnson	2	1	4	7	14
40333	Dallas	0	0	0	0	0
40334	Tarrant	67	37	38	0	142
40338	Dallas	51	4	0	0	55
40339	Dallas	0	0	0	0	0
40340	Dallas	0	0	0	0	0
40341	Dallas	1	1	0	0	2
40342	Dallas	3	5	3	0	11
40343	Dallas	0	0	0	0	0
40344	Dallas	0	1	0	0	1
40345	Dallas	12	5	4	5	26
40346	Dallas	0	0	0	0	0
40347	Dallas	0	0	0	0	0
40348	Dallas	0	0	0	0	0
40349	Dallas	0	0	1	0	1
40350	Dallas	0	1	0	0	1
40351	Dallas	5	7	4	3	19
40352	Dallas	83	28	11	4	126
40353	Dallas	40	10	13	0	63
40354	Dallas	5	3	0	0	8
40355	Dallas	11	7	3	0	21
40356	Dallas	27	14	6	5	52
40357	Dallas	3	1	0	0	4
40358	Dallas	21	5	5	0	31
40359	Dallas	135	19	12	2	168
40360	Dallas	0	0	0	0	0
40361	Dallas	0	0	0	0	0
40362	Dallas	0	0	0	0	0
40363	Dallas	0	0	0	0	0
40364	Dallas	0	0	0	0	0
40365	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40366	Dallas	0	0	0	0	0
40367	Dallas	0	0	0	0	0
40368	Dallas	0	0	0	0	0
40369	Dallas	0	0	0	0	0
40370	Dallas	0	0	0	0	0
40371	Dallas	0	0	0	0	0
40372	Dallas	0	0	0	0	0
40373	Dallas	0	0	0	0	0
40374	Dallas	0	0	0	0	0
40375	Dallas	0	0	0	0	0
40376	Dallas	0	0	0	0	0
40377	Dallas	0	0	0	0	0
40378	Dallas	0	0	0	0	0
40379	Dallas	0	0	0	0	0
40380	Dallas	0	0	0	0	0
40381	Dallas	0	0	0	0	0
40382	Dallas	0	0	0	0	0
40383	Dallas	0	0	0	0	0
40384	Dallas	0	0	0	0	0
40385	Dallas	0	0	0	0	0
40386	Dallas	0	0	0	0	0
40387	Dallas	0	0	0	0	0
40388	Dallas	0	0	0	0	0
40389	Dallas	0	0	0	130	130
40390	Dallas	0	0	0	20	20
40391	Dallas	0	0	0	229	229
40392	Dallas	1	37	101	374	513
40393	Dallas	0	0	0	0	0
40394	Dallas	0	0	0	0	0
40395	Dallas	0	0	0	0	0
40396	Dallas	0	0	0	0	0
40397	Dallas	0	0	0	0	0
40398	Dallas	0	0	0	0	0
40399	Dallas	0	0	0	0	0
40400	Dallas	0	0	0	0	0
40401	Dallas	0	0	0	0	0
40403	Dallas	0	0	0	7	7
40404	Dallas	354	42	58	487	941
40405	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40406	Dallas	2	0	46	0	48
40407	Dallas	0	0	0	0	0
40408	Dallas	0	0	0	0	0
40409	Dallas	0	0	0	0	0
40410	Dallas	21	5	0	0	26
40411	Dallas	0	0	0	0	0
40412	Dallas	0	0	0	0	0
40413	Dallas	0	0	0	0	0
40414	Dallas	0	0	0	0	0
40415	Dallas	0	0	0	0	0
40416	Dallas	0	0	0	0	0
40417	Dallas	0	0	0	8	8
40418	Dallas	0	0	0	0	0
40419	Dallas	0	0	0	0	0
40420	Dallas	0	0	0	0	0
40421	Dallas	0	0	0	0	0
40422	Dallas	0	0	0	0	0
40423	Dallas	0	0	0	0	0
40424	Dallas	0	0	0	0	0
40425	Dallas	0	0	0	0	0
40426	Dallas	0	0	0	0	0
40427	Dallas	0	0	0	0	0
40428	Dallas	0	0	0	0	0
40429	Dallas	0	0	0	0	0
40430	Dallas	0	0	0	0	0
40431	Dallas	210	50	18	1	279
40432	Dallas	42	12	4	0	58
40433	Dallas	44	36	33	1	114
40434	Dallas	12	6	23	1	42
40435	Dallas	12	2	7	0	21
40436	Dallas	15	6	5	0	26
40437	Dallas	7	3	4	0	14
40438	Dallas	25	9	4	0	38
40439	Dallas	19	11	4	0	34
40440	Dallas	2	2	0	0	4
40441	Dallas	1	0	1	0	2
40442	Dallas	8	0	8	1	17
40443	Dallas	4	5	1	0	10
40444	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40445	Dallas	0	0	0	0	0
40446	Dallas	0	0	0	0	0
40447	Dallas	0	0	0	0	0
40448	Dallas	0	0	0	0	0
40450	Dallas	0	30	0	0	30
40451	Dallas	0	0	0	0	0
40452	Dallas	0	0	0	0	0
40453	Dallas	0	0	0	0	0
40454	Dallas	0	0	0	0	0
40455	Dallas	0	0	0	0	0
40456	Dallas	0	0	0	0	0
40457	Dallas	0	0	0	0	0
40458	Dallas	0	0	0	0	0
40459	Dallas	0	0	0	0	0
40460	Dallas	0	0	0	0	0
40461	Dallas	0	0	0	0	0
40462	Dallas	0	0	0	0	0
40463	Dallas	0	0	0	0	0
40464	Dallas	0	0	0	0	0
40465	Dallas	0	0	0	0	0
40466	Dallas	0	0	0	0	0
40467	Dallas	0	0	0	0	0
40469	Dallas	0	0	0	0	0
40470	Dallas	0	0	0	0	0
40471	Dallas	0	0	0	0	0
40472	Dallas	0	0	0	0	0
40473	Dallas	0	0	0	0	0
40474	Dallas	0	0	0	0	0
40475	Dallas	0	0	0	0	0
40476	Dallas	0	0	0	0	0
40477	Dallas	0	0	0	0	0
40478	Dallas	0	0	0	0	0
40479	Dallas	0	0	0	0	0
40480	Dallas	0	0	0	0	0
40481	Dallas	0	0	0	0	0
40482	Dallas	0	0	0	0	0
40483	Dallas	0	0	0	0	0
40484	Dallas	0	0	0	0	0
40485	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40486	Dallas	0	0	0	0	0
40487	Dallas	0	0	0	0	0
40488	Dallas	0	0	0	0	0
40489	Dallas	0	0	0	0	0
40490	Dallas	0	0	0	0	0
40491	Dallas	0	4	0	0	4
40492	Dallas	0	0	0	0	0
40493	Dallas	0	0	0	0	0
40494	Dallas	0	0	0	0	0
40495	Dallas	0	0	0	0	0
40496	Dallas	0	0	0	0	0
40497	Dallas	0	0	0	0	0
40498	Dallas	44	31	3	0	78
40499	Dallas	0	4	14	8	26
40500	Dallas	1	1	0	0	2
40501	Dallas	16	5	3	0	24
40502	Dallas	3	0	4	0	7
40503	Dallas	47	16	3	1	67
40504	Dallas	165	14	8	3	190
40505	Dallas	16	4	1	0	21
40507	Dallas	0	2	6	0	8
40508	Dallas	9	11	8	5	33
40509	Dallas	0	0	0	0	0
40511	Dallas	20	7	1	29	57
40512	Dallas	1	0	10	1	12
40513	Dallas	0	0	0	0	0
40514	Dallas	0	0	0	0	0
40515	Dallas	0	0	0	0	0
40516	Dallas	0	0	0	0	0
40517	Dallas	0	0	0	0	0
40518	Dallas	0	0	0	0	0
40519	Dallas	0	0	0	0	0
40522	Dallas	0	0	0	0	0
40523	Dallas	0	0	0	0	0
40524	Dallas	0	0	0	0	0
40525	Dallas	0	0	0	0	0
40526	Dallas	0	0	0	0	0
40528	Dallas	0	0	0	0	0
40529	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40530	Dallas	0	0	0	0	0
40531	Dallas	11	0	2	0	13
40532	Dallas	20	3	10	0	33
40533	Dallas	6	8	2	0	16
40534	Dallas	0	0	0	0	0
40535	Dallas	0	0	0	0	0
40536	Dallas	0	0	0	0	0
40537	Dallas	0	0	0	0	0
40538	Dallas	0	0	0	5	5
40539	Dallas	0	0	0	0	0
40540	Dallas	0	0	0	0	0
40541	Dallas	0	0	0	0	0
40542	Dallas	0	0	0	0	0
40543	Dallas	0	0	0	0	0
40544	Dallas	52	0	0	44	96
40545	Dallas	0	0	0	0	0
40546	Dallas	0	0	0	0	0
40547	Dallas	0	0	0	0	0
40548	Dallas	0	0	0	0	0
40549	Dallas	0	0	0	0	0
40550	Dallas	0	0	0	0	0
40551	Dallas	0	0	0	0	0
40552	Dallas	0	0	0	0	0
40558	Dallas	0	0	0	0	0
40559	Dallas	0	0	0	0	0
40560	Dallas	0	0	0	0	0
40561	Dallas	0	0	0	0	0
40562	Dallas	0	0	0	0	0
40563	Dallas	16	0	10	0	26
40564	Dallas	0	0	0	0	0
40565	Dallas	0	0	0	0	0
40566	Dallas	0	0	0	0	0
40567	Dallas	0	0	0	0	0
40568	Dallas	0	0	0	0	0
40569	Dallas	98	0	4	197	299
40572	Dallas	39	0	11	40	90
40573	Dallas	0	0	0	0	0
40574	Dallas	0	0	0	0	0
40575	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40576	Dallas	0	0	0	16	16
40577	Dallas	0	0	0	0	0
40578	Dallas	0	0	0	0	0
40579	Dallas	258	0	1	364	623
40581	Dallas	0	0	0	6	6
40583	Dallas	0	0	0	0	0
40584	Dallas	0	0	0	0	0
40586	Dallas	0	0	0	0	0
40587	Dallas	0	0	0	0	0
40588	Dallas	0	0	0	0	0
40589	Dallas	0	0	0	0	0
40590	Dallas	0	0	0	0	0
40591	Dallas	0	0	0	0	0
40592	Dallas	0	0	0	0	0
40593	Dallas	0	0	0	0	0
40594	Dallas	0	0	0	0	0
40595	Dallas	5	3	4	0	12
40596	Dallas	0	0	0	0	0
40597	Dallas	0	0	0	0	0
40598	Dallas	0	0	0	0	0
40599	Dallas	0	0	0	0	0
40600	Dallas	0	0	0	24	24
40601	Dallas	0	0	0	0	0
40602	Dallas	0	0	0	0	0
40603	Dallas	0	0	0	0	0
40604	Dallas	1	1	2	4	8
40605	Dallas	0	0	0	0	0
40606	Dallas	0	0	0	0	0
40607	Dallas	0	0	0	0	0
40608	Dallas	30	0	53	0	83
40609	Dallas	0	0	0	0	0
40610	Dallas	0	0	0	0	0
40611	Dallas	0	0	0	0	0
40612	Dallas	0	0	0	4	4
40613	Dallas	0	1	15	0	16
40614	Dallas	0	0	0	0	0
40615	Dallas	0	0	0	0	0
40616	Dallas	0	0	0	0	0
40617	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40618	Dallas	0	0	0	0	0
40619	Dallas	0	0	0	0	0
40620	Dallas	0	0	0	0	0
40621	Dallas	0	0	0	0	0
40622	Dallas	0	0	0	0	0
40623	Dallas	0	0	0	0	0
40625	Dallas	0	0	0	0	0
40626	Dallas	0	0	0	0	0
40627	Dallas	0	0	0	0	0
40628	Dallas	0	0	0	0	0
40629	Dallas	0	0	0	0	0
40630	Dallas	0	0	0	0	0
40631	Dallas	0	0	0	0	0
40632	Dallas	0	0	0	0	0
40633	Dallas	82	0	2	266	350
40634	Dallas	0	0	0	0	0
40635	Dallas	0	0	0	0	0
40636	Dallas	0	0	0	0	0
40637	Dallas	0	0	0	0	0
40638	Dallas	0	0	0	0	0
40639	Dallas	0	0	0	0	0
40640	Dallas	0	0	0	0	0
40641	Dallas	0	0	0	0	0
40642	Dallas	0	0	0	0	0
40643	Dallas	0	0	0	0	0
40644	Dallas	0	0	0	0	0
40645	Dallas	0	0	0	0	0
40646	Dallas	0	0	0	0	0
40647	Dallas	0	0	0	0	0
40648	Dallas	0	0	0	0	0
40649	Dallas	0	0	0	0	0
40651	Dallas	0	0	0	0	0
40652	Dallas	0	0	0	0	0
40653	Dallas	0	0	0	0	0
40654	Dallas	0	0	0	0	0
40655	Dallas	0	0	0	0	0
40656	Dallas	0	0	0	0	0
40657	Dallas	0	0	0	0	0
40658	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40659	Dallas	0	0	0	0	0
40660	Dallas	0	0	0	0	0
40661	Dallas	0	0	0	0	0
40663	Dallas	0	0	0	0	0
40664	Dallas	0	0	0	0	0
40665	Dallas	0	0	0	0	0
40666	Dallas	0	0	0	0	0
40667	Dallas	0	0	0	0	0
40668	Dallas	0	0	0	0	0
40669	Dallas	0	0	0	0	0
40670	Dallas	0	0	0	0	0
40671	Dallas	0	0	0	0	0
40672	Dallas	0	0	0	0	0
40673	Dallas	0	0	0	0	0
40674	Dallas	0	0	0	0	0
40675	Dallas	0	0	0	0	0
40676	Dallas	0	0	0	0	0
40677	Dallas	0	0	0	0	0
40678	Dallas	0	0	0	0	0
40679	Dallas	0	0	0	0	0
40680	Dallas	0	0	0	0	0
40681	Dallas	0	0	0	0	0
40682	Dallas	0	0	0	0	0
40684	Dallas	0	0	0	0	0
40685	Dallas	0	0	0	0	0
40686	Dallas	0	0	0	0	0
40687	Dallas	0	0	0	0	0
40688	Dallas	0	0	0	0	0
40717	Dallas	0	0	0	0	0
40718	Dallas	0	0	0	0	0
40719	Dallas	0	0	0	0	0
40720	Dallas	0	0	0	0	0
40721	Dallas	0	0	0	0	0
40722	Dallas	0	0	0	0	0
40723	Dallas	0	0	0	0	0
40724	Dallas	0	0	0	0	0
40725	Tarrant	0	0	0	0	0
40726	Tarrant	0	0	0	0	0
40727	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40728	Tarrant	0	0	0	0	0
40729	Tarrant	0	0	0	0	0
40730	Tarrant	21	1	4	52	78
40731	Tarrant	0	0	0	0	0
40732	Tarrant	0	0	0	0	0
40733	Tarrant	0	0	0	501	501
40734	Tarrant	0	0	0	0	0
40735	Tarrant	0	0	0	0	0
40736	Tarrant	0	0	0	0	0
40737	Tarrant	0	0	0	0	0
40738	Tarrant	0	0	0	0	0
40739	Tarrant	0	0	0	0	0
40740	Tarrant	59	15	38	87	199
40741	Tarrant	0	0	0	0	0
40742	Tarrant	0	0	0	0	0
40743	Tarrant	0	0	0	0	0
40744	Tarrant	15	0	5	0	20
40745	Tarrant	0	0	0	0	0
40746	Tarrant	0	0	0	0	0
40747	Tarrant	0	0	0	0	0
40748	Tarrant	0	0	0	0	0
40749	Tarrant	0	0	0	0	0
40750	Tarrant	0	0	0	0	0
40751	Tarrant	0	0	0	0	0
40752	Tarrant	0	0	0	0	0
40753	Tarrant	0	0	0	0	0
40754	Tarrant	0	0	0	0	0
40755	Tarrant	0	0	0	0	0
40756	Tarrant	0	0	0	0	0
40757	Tarrant	0	0	0	0	0
40760	Tarrant	0	0	0	30	30
40761	Tarrant	0	0	0	0	0
40762	Tarrant	0	0	0	0	0
40763	Tarrant	0	0	0	0	0
40764	Tarrant	0	0	0	0	0
40765	Tarrant	0	0	0	0	0
40766	Tarrant	0	0	0	0	0
40767	Tarrant	0	0	0	0	0
40769	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40770	Tarrant	0	0	0	0	0
40771	Tarrant	0	0	0	0	0
40772	Tarrant	0	0	0	0	0
40773	Tarrant	0	0	0	0	0
40774	Tarrant	0	0	0	0	0
40775	Tarrant	0	0	0	0	0
40776	Tarrant	0	0	0	0	0
40777	Tarrant	0	0	0	0	0
40778	Tarrant	0	0	0	0	0
40779	Tarrant	0	0	0	0	0
40780	Tarrant	0	0	0	0	0
40781	Tarrant	0	0	0	0	0
40782	Tarrant	0	0	0	0	0
40783	Tarrant	0	0	0	0	0
40784	Tarrant	0	0	0	0	0
40785	Tarrant	0	0	0	0	0
40786	Tarrant	0	0	0	0	0
40787	Tarrant	0	0	0	0	0
40788	Tarrant	0	0	0	0	0
40789	Tarrant	0	0	0	0	0
40790	Tarrant	0	0	0	0	0
40791	Tarrant	0	0	0	0	0
40792	Tarrant	0	0	0	0	0
40793	Tarrant	0	0	0	0	0
40794	Tarrant	0	0	0	0	0
40795	Tarrant	0	0	0	0	0
40796	Tarrant	0	0	0	0	0
40797	Tarrant	0	0	0	0	0
40798	Tarrant	0	0	0	0	0
40799	Tarrant	0	0	0	0	0
40800	Tarrant	0	0	0	0	0
40801	Tarrant	0	0	0	0	0
40802	Tarrant	0	0	0	0	0
40803	Tarrant	0	0	0	0	0
40804	Tarrant	0	0	0	0	0
40805	Tarrant	0	0	0	0	0
40806	Tarrant	0	0	0	0	0
40807	Tarrant	0	0	0	0	0
40808	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40809	Tarrant	0	0	0	0	0
40811	Tarrant	0	0	0	0	0
40812	Tarrant	16	0	1	0	17
40813	Tarrant	13	0	2	0	15
40814	Tarrant	0	0	0	0	0
40815	Tarrant	0	0	0	0	0
40816	Tarrant	0	0	0	0	0
40817	Tarrant	0	0	0	0	0
40818	Tarrant	0	0	0	0	0
40819	Tarrant	19	3	12	0	34
40820	Tarrant	0	0	0	0	0
40821	Tarrant	0	0	0	0	0
40822	Tarrant	0	0	0	0	0
40823	Tarrant	0	0	0	0	0
40824	Tarrant	0	0	0	0	0
40825	Tarrant	0	0	0	0	0
40826	Tarrant	0	0	0	0	0
40827	Tarrant	0	0	0	0	0
40828	Tarrant	0	0	0	0	0
40829	Tarrant	0	0	0	0	0
40830	Tarrant	0	0	0	0	0
40831	Tarrant	0	0	0	0	0
40832	Tarrant	0	0	0	0	0
40833	Tarrant	0	0	0	0	0
40834	Tarrant	0	0	0	0	0
40835	Tarrant	0	0	0	0	0
40836	Tarrant	0	0	0	0	0
40837	Tarrant	0	0	0	0	0
40838	Tarrant	0	0	0	0	0
40839	Tarrant	0	0	0	0	0
40840	Tarrant	0	0	0	0	0
40841	Tarrant	0	0	0	0	0
40842	Tarrant	0	0	0	0	0
40843	Tarrant	0	0	0	0	0
40844	Tarrant	0	0	0	0	0
40845	Tarrant	0	0	0	0	0
40846	Tarrant	0	0	0	0	0
40847	Tarrant	0	0	0	0	0
40848	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40849	Tarrant	87	12	56	0	155
40850	Tarrant	0	0	0	0	0
40851	Tarrant	0	0	0	0	0
40852	Tarrant	0	0	0	0	0
40853	Tarrant	0	0	0	0	0
40854	Tarrant	0	0	0	0	0
40857	Collin	0	0	0	0	0
40858	Collin	0	0	0	0	0
40859	Collin	10	4	5	0	19
40860	Collin	1	2	21	132	156
40861	Collin	0	0	0	17	17
40862	Collin	0	0	0	0	0
40863	Collin	0	0	0	0	0
40864	Collin	0	0	0	9	9
40865	Collin	7	3	8	10	28
40866	Collin	0	0	0	0	0
40867	Collin	0	0	0	0	0
40868	Collin	0	0	0	0	0
40869	Collin	0	0	0	5	5
40870	Denton	0	0	0	0	0
40871	Collin	0	0	0	0	0
40872	Denton	3699	385	940	2675	7699
40873	Denton	841	253	651	7398	9143
40874	Denton	2387	59	103	0	2549
40875	Denton	78	0	9	0	87
40876	Denton	110	12	91	0	213
40878	Denton	0	0	0	0	0
40879	Denton	0	0	0	0	0
40880	Denton	0	0	0	0	0
40881	Denton	0	0	0	0	0
40882	Denton	0	0	0	0	0
40883	Denton	56	38	125	64	283
40884	Denton	0	0	0	0	0
40885	Denton	0	0	0	212	212
40891	Tarrant	0	0	0	0	0
40892	Tarrant	0	0	0	0	0
40893	Tarrant	0	0	0	0	0
40894	Tarrant	0	0	0	0	0
40895	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40896	Tarrant	8	13	49	0	70
40897	Tarrant	0	0	0	0	0
40898	Tarrant	0	0	0	0	0
40899	Tarrant	0	0	0	0	0
40900	Tarrant	0	0	0	0	0
40901	Tarrant	0	0	0	0	0
40902	Tarrant	0	0	0	0	0
40903	Tarrant	0	0	0	0	0
40904	Tarrant	0	0	0	0	0
40905	Tarrant	0	0	0	0	0
40906	Tarrant	0	0	0	0	0
40907	Tarrant	0	0	0	0	0
40908	Tarrant	0	0	0	0	0
40911	Tarrant	0	0	0	145	145
40912	Tarrant	0	0	0	0	0
40913	Tarrant	0	0	0	0	0
40914	Tarrant	0	0	0	0	0
40917	Tarrant	0	0	0	0	0
40919	Tarrant	0	0	0	0	0
40920	Tarrant	0	0	0	0	0
40921	Tarrant	0	0	0	0	0
40922	Tarrant	0	0	0	0	0
40923	Tarrant	0	0	0	0	0
40924	Tarrant	0	0	0	0	0
40925	Tarrant	0	0	0	0	0
40926	Tarrant	0	0	0	0	0
40927	Tarrant	41	0	4	0	45
40929	Tarrant	0	0	0	0	0
40930	Tarrant	0	0	0	0	0
40931	Tarrant	0	0	0	0	0
40932	Tarrant	0	0	0	0	0
40933	Tarrant	90	1	9	0	100
40934	Tarrant	0	0	0	0	0
40935	Tarrant	0	0	0	0	0
40936	Tarrant	0	0	0	0	0
40937	Tarrant	0	0	0	0	0
40938	Tarrant	117	0	0	1599	1716
40939	Tarrant	206	37	107	693	1043
40940	Tarrant	486	11	16	35	548

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
40941	Tarrant	164	5	26	0	195
40942	Tarrant	0	0	0	0	0
40943	Tarrant	229	29	21	1090	1369
40944	Tarrant	0	0	0	0	0
40945	Tarrant	1069	2	9	814	1894
40946	Tarrant	0	0	0	0	0
40947	Tarrant	0	0	0	418	418
40948	Tarrant	0	0	0	0	0
40949	Tarrant	5	0	15	0	20
40969	Tarrant	0	0	0	0	0
40970	Tarrant	0	0	0	0	0
40971	Tarrant	0	0	0	0	0
40980	Tarrant	0	0	0	0	0
40981	Tarrant	0	0	0	0	0
40982	Tarrant	0	0	0	0	0
40983	Tarrant	0	0	0	168	168
40984	Tarrant	0	0	0	0	0
40986	Tarrant	0	0	0	0	0
40987	Tarrant	0	0	0	0	0
40988	Tarrant	27	17	4	23	71
40989	Tarrant	0	0	0	0	0
40991	Tarrant	0	0	0	0	0
40992	Tarrant	0	0	0	0	0
40993	Tarrant	0	0	0	0	0
40994	Tarrant	13	0	2	3	18
40995	Tarrant	0	0	0	0	0
40997	Tarrant	0	2	2	7	11
40998	Tarrant	302	45	56	0	403
40999	Tarrant	3	1	0	0	4
41000	Tarrant	5	14	20	7	46
41002	Tarrant	0	0	0	0	0
41005	Tarrant	1364	32	113	988	2497
41006	Tarrant	0	0	0	0	0
41007	Tarrant	0	0	0	0	0
41018	Tarrant	0	0	0	0	0
41019	Tarrant	0	0	0	0	0
41020	Tarrant	0	0	0	0	0
41021	Tarrant	0	0	0	0	0
41022	Tarrant	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
41023	Tarrant	0	0	0	0	0
41027	Tarrant	0	0	0	0	0
41031	Denton	0	0	0	0	0
41032	Collin	354	16	27	20	417
41033	Collin	253	81	274	844	1452
41034	Rockwall	36	45	205	787	1073
41035	Collin	0	0	0	0	0
41036	Rockwall	361	5	11	0	377
41037	Rockwall	143	55	212	608	1018
41038	Kaufman	0	0	0	68	68
41039	Kaufman	189	8	20	206	423
41054	Johnson	0	0	0	0	0
41056	Johnson	147	30	122	752	1051
41057	Johnson	21	1	9	129	160
41060	Collin	202	10	0	0	212
41061	Collin	50	19	33	0	102
41062	Collin	0	0	0	0	0
41063	Collin	0	0	0	0	0
41116	Ellis	0	0	0	0	0
41122	Collin	0	0	0	0	0
41124	Collin	1497	94	541	1939	4071
41125	Collin	0	0	0	0	0
41129	Dallas	0	0	0	0	0
41131	Dallas	0	0	0	0	0
41132	Dallas	424	92	19	51	586
41133	Dallas	0	0	0	0	0
41134	Dallas	0	0	0	0	0
41137	Dallas	188	32	31	6	257
41138	Dallas	0	0	0	0	0
41139	Dallas	2	1	0	0	3
41140	Dallas	4	6	11	5	26
41141	Dallas	0	0	0	0	0
41143	Dallas	17	1	1	0	19
41144	Dallas	0	0	0	0	0
41145	Dallas	0	0	0	0	0
41146	Dallas	0	0	0	0	0
41147	Dallas	0	0	0	0	0
41148	Dallas	0	0	0	0	0
41149	Dallas	0	0	0	0	0

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
41150	Dallas	0	0	0	0	0
41151	Dallas	0	0	0	0	0
41152	Dallas	0	0	0	0	0
41153	Dallas	0	0	0	0	0
41157	Dallas	0	0	0	0	0
41158	Denton	0	0	0	0	0
41159	Denton	338	119	267	3215	3939
41160	Denton	2356	36	63	443	2898
41163	Kaufman	1314	66	192	4274	5846
41165	Johnson	0	0	0	0	0
41166	Johnson	0	0	0	0	0
41168	Johnson	0	0	0	0	0
41169	Johnson	0	0	0	0	0
41170	Johnson	0	0	0	0	0
41171	Johnson	0	0	0	0	0
41172	Johnson	0	0	0	0	0
41173	Johnson	0	0	0	0	0
41174	Johnson	0	0	0	0	0
41175	Johnson	0	0	0	0	0
41176	Johnson	0	0	0	0	0
41177	Johnson	0	0	0	0	0
41178	Johnson	0	0	0	0	0
41179	Johnson	0	0	0	0	0
41180	Johnson	0	0	0	0	0
41185	Tarrant	442	12	83	786	1323
41186	Tarrant	0	0	0	0	0
41187	Tarrant	0	0	0	0	0
41188	Tarrant	0	0	0	0	0
41189	Tarrant	0	0	0	0	0
41190	Tarrant	0	0	0	0	0
41191	Tarrant	0	0	0	0	0
41193	Tarrant	0	0	0	0	0
41194	Tarrant	0	0	0	0	0
41195	Tarrant	0	0	0	0	0
41196	Tarrant	0	0	0	0	0
41198	Tarrant	0	0	0	0	0
41200	Tarrant	0	0	0	0	0
41201	Tarrant	306	41	133	691	1171
41202	Tarrant	105	1	7	0	113

TSZ	COUNTY	Occupied Lots	Housing Inventory	Vacant Developed Lots	Future Lots	Total
41205	Dallas	0	0	0	0	0
41206	Ellis	0	0	0	0	0
41207	Tarrant	0	0	0	0	0
41208	Dallas	0	0	0	0	0
41209	Tarrant	0	0	0	0	0
46000	Johnson	0	0	0	0	0
46003	Johnson	0	0	0	0	0
46004	Johnson	0	0	0	0	0
46005	Johnson	0	0	0	0	0
46006	Johnson	0	0	0	0	0
46007	Johnson	0	0	0	0	0
46008	Johnson	0	0	0	0	0
46012	Johnson	0	0	0	0	0
46015	Johnson	0	0	0	0	0
46016	Johnson	0	0	0	0	0
46017	Johnson	0	0	0	0	0
46021	Johnson	0	0	0	0	0
46022	Johnson	0	0	0	0	0
47018	Kaufman	0	0	0	1885	1885
47019	Kaufman	34	3	20	0	57
47032	Kaufman	0	0	0	0	0
47033	Kaufman	0	0	0	0	0

Appendix C - Square Feet Per Employee Calculations

The following chart represents employee coefficients that were used as a guide when reviewing and estimating employment.

Land Use Category	Estimated Square Feet per Employee
Office	275
Retail	300
Hotel/Motel	.75 Emp per Room
Institutional	800
Industrial	1250

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Appendix B

NTTA System Value of Time Update

This appendix contains the documentation of the value of time update as provided by the subconsultant, Resource Systems Group. This report was provided to CDM Smith in August 2016.

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MEMO

TO: Yagnesh Jarmarwala, CDM Smith

FROM: Mark Fowler, RSG

CC: Tristan Cherry, RSG

DATE: August 26, 2016

SUBJECT: NTTA System Wide Value of Time Update

In the first half of 2011, RSG conducted a stated preference (SP) survey for automobile drivers making trips within the Dallas–Fort Worth area. In the five years that have elapsed since that original data collection effort, it is possible the original estimates of VOT may need updating to reflect any socioeconomic changes in the region. In general, values of time in a particular corridor or area can be affected by several factors, including:

1. The types of trips being made (e.g., trip purposes, trip lengths),
2. The general travel conditions (e.g., congestion levels on existing roads)
3. The characteristics of the households making trips (e.g., household incomes) and
4. Economic conditions

While there may have been some changes in trip types and travel conditions in the corridor, they are likely to have been small and their effects are most likely to be mixed. The factors that are more likely to affect values of time over a five-year period are the characteristics of the households traveling in the corridor and the prevailing economic conditions in the region.

The behavioral models developed by RSG using the data collected in 2011 included an interaction with household income, as experience and research has shown that values of time increase as household incomes rise, though at a rate that is less than linear. If income levels have changed significantly in the region, it is likely that values of time have also changed.

In addition to the effect of household income on VOT, two economic effects can have an impact on values of time. First, inflation directly affects the net value of a given income level. Since the survey was conducted in 2011, both the values of time and the income levels are in 2011 $. Over the period from March of 2011, when the survey administration began, to November 2016 when the latest data is available, the consumer price index (CPI) has risen approximately 4.9% according to Bureau of

Labor Statistics data for the Dallas–Fort Worth area. All else equal, the nominal value of time should be increased by 4.9% to reflect current 2016 $. The table below shows bi-monthly CPI values for the Dallas–Fort Worth region, re-normalized to 1.0 for the month of March 2011. The table shows that over the past 5 years, CPI in the region has been variable, with overall inflation rising as high as 6.1% in 2014, but in general shows a steady and slow upward trajectory.

TABLE 1: DALLAS–FORT WORTH CPI GROWTH

	Jan	Mar	May	Jul	Sep	Nov
2011		1.000	1.009	1.008	1.011	1.011
2012	1.011	1.027	1.025	1.021	1.034	1.029
2013	1.033	1.046	1.042	1.048	1.049	1.041
2014	1.045	1.057	1.061	1.061	1.060	1.049
2015	1.038	1.051	1.056	1.057	1.051	1.049

The second potential economic effect that can influence travelers' willingness to pay is changes in discretionary spending. For example, consumers could change the amounts they spend independently of changes in income by trying to save money in anticipation of more difficult economic times. Consumer expenditures data are reported by the (BLS) at the regional level in calendar year intervals for overall expenditures and at and multiyear formats. The most recent data for overall expenditures is available at the MSA level for the Dallas–Fort Worth region. For the purposes of this analysis, the most recently published data for 2014 is compared against the total expenditures from the calendar year 2011. Between 2011 and 2014, average household spending in the region increased by 12.9%, significantly outpacing CPI inflation. Accounting for inflation, residents of the Dallas–Fort Worth region by the end of 2014 were spending more money in absolute terms than they were in 2011. Total spending on transportation items increased approximately 21% during this same period even while non-inflation adjusted spending on gasoline remained nearly equal. In other words, consumers in the region are spending less of their income on fuel in 2014 than they were in 2011. Instead, much of the spending growth in transportation costs can be attributed to 84% increase in the mean amount of dollars consumers in the Dallas–Fort Worth MSA spent on new vehicle purchases as the region recovered from the recession at the end of the last decade.

Incomes in the region have also changed since the first quarter of 2011. According to quarterly wage data from the BLS, between the first quarter of 2011, when the survey was conducted, and the first quarter of 2015, the latest equivalent quarter for which wage data is available, average weekly wages in the Dallas–Fort Worth area grew by approximately 12.9%, more than inflation over the same period of 3.6%. This overall wage increase means there is a significant growth in real inflation-adjusted income in the Dallas–Fort Worth region.

TABLE 2: DALLAS–FORT WORTH AVERAGE WEEKLY WAGES

Year	Q1	Q2	Q3	Q4
2011	$1,013	$967	$1,002	$1,033
2012	$1,080	$977	$991	$1,087
2013	$1,072	$992	$1,001	$1,072
2014	$1,123	$1,018	$1,030	$1,111
2015	$1,144	$1,044	$1,049	$1,164

CONCLUSIONS

Based on our review of the available data, we believe the values of time that we estimated for potential travelers on tolled NTTA facilities should be adjusted to reflect the changes in the CPI from 2011$ to 2016$. In addition, income growth has outpaced inflation over this same time period, resulting in a growth in real incomes of about 9.3%. As a result, VOT has more than likely exceeded the CPI increased in the region and VOTs should be adjusted to match. The income elasticity estimated as part of the discrete choice models can be used to calculate the impact that this growth in real income has on VOT. At the sample median income of $87,500, an 9.3% growth in real income results in a growth in VOT of approximately 0.98%. Our recommendation is therefore to adjust the values of time by 1.0098 to reflect changes in real income and 1.049 to bring the values up to 2016$, for a total adjustment factor of 1.059.

MARK FOWLER
Director

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