



COLLIN COUNTY
MOBILITY PLAN

2014 UPDATE



DRAFT

Collin County Mobility Plan 2014 Update

Prepared for

Collin County Department of Engineering
4690 Community Ave., Suite 200, McKinney, TX 75071

Prepared by

Jacobs Engineering Group, Inc.

In association with

Freese and Nichols, Inc.

Alliance Transportation Group

Strategic Community Solutions

April 2014



Collin County Mobility Plan 2014 Update

Prepared under the direction of

Collin County Commissioners Court

Keith Self, County Judge
Mark Reid, County Commissioner, Precinct 1
Cheryl Williams, County Commissioner, Precinct 2
Chris Hill, County Commissioner, Precinct 3
Duncan Webb, County Commissioner, Precinct 4

Collin County Planning Board

Shep Stahel – Chairperson

Don Thoes	Bill Moore
Z Marshall	Joe Helmberger
Mardy Brown	Stan Sewell
Loretta Ellerbe	Bill Mills
Roger Bolin	Bracy Wilson
Buddy Dean	Gerald Vokolek
Bill Cox	Todd Winters
John Wales	Matt Hilton
David Goss	Mark Reid

Collin County Department of Engineering

Ruben Delgado, P.E.....Director of Engineering
Tracy Homfeld, P.E.....Assistant Director of Engineering
Teresa Nelson.....Office Administrator, Engineering

Consultants

Jacobs Engineering Group, Inc.
Freese and Nichols, Inc.
Alliance Transportation Group
Strategic Community Solutions



Table of Contents

<u>Table of Contents</u>	v
<u>List of Tables</u>	viii
<u>List of Figures</u>	ix
<u>Preface</u>	xi
<u>Executive Summary</u>	xiii
<u>1. Introduction</u>	1
<u>2. The Plan</u>	5
2.1. <u>Goals and Objectives</u>	5
2.2. <u>Relationship with other Plans and Programs</u>	6
2.2.1. <u>National Highway System</u>	6
2.2.2. <u>Mobility 2035 Metropolitan Transportation Plan</u>	7
2.2.3. <u>Regional Thoroughfare Plan</u>	7
2.2.4. <u>Texas Metropolitan Mobility Plan</u>	7
2.2.5. <u>Collin County Public Transportation Plan</u>	7
2.2.6. <u>Collin County Transit Study</u>	8
2.2.7. <u>Collin County 2003 Bond Program</u>	8
2.2.8. <u>Collin County 2007 Bond Program</u>	8
2.2.9. <u>Parks and Open Space Strategic Plan</u>	9
2.2.10. <u>Collin County Regional Trails Master Plan</u>	9
2.2.11. <u>Municipal Comprehensive Plans and Thoroughfare Plans</u>	11
2.3. <u>The Plan Update</u>	11
2.3.1. <u>Scope</u>	12
2.3.2. <u>Plan Organization</u>	12
<u>3. The Partners</u>	15
3.1. <u>The County</u>	15
3.2. <u>The Cities</u>	15
3.3. <u>Transportation Agencies</u>	17
3.3.1. <u>North Central Texas Council of Governments</u>	17
3.3.2. <u>Texas Department of Transportation</u>	17
3.3.3. <u>North Texas Tollway Authority</u>	18
3.3.4. <u>Dallas Area Rapid Transit Authority</u>	18
3.3.5. <u>TAPS Public Transit</u>	18
3.3.6. <u>Railroads</u>	18
<u>4. The Planning Process</u>	19
4.1. <u>Data Collection</u>	20
4.1.1. <u>Thoroughfare System Inventory</u>	20
4.1.2. <u>Environmental Constraints</u>	24
4.1.3. <u>City Land Use and Transportation Plans</u>	26



4.1.4.	<u>Demographic and Land Use Forecasts</u>	29
4.2.	<u>Forecasting Process</u>	38
4.2.1.	<u>The Travel Demand Forecasting Process</u>	38
4.2.2.	<u>Transportation Networks</u>	41
4.2.3.	<u>Regional Travel Model</u>	44
4.3.	<u>Public Involvement</u>	48
4.3.1.	<u>Collin County Planning Board</u>	48
4.3.2.	<u>Community Workshops</u>	48
4.3.3.	<u>Meetings with Municipalities</u>	49
4.3.4.	<u>Community Meeting</u>	49
4.3.5.	<u>Public Hearing</u>	50
4.3.6.	<u>Project Website</u>	50
5.	<u>Existing Conditions</u>	51
5.1.	<u>Overview</u>	51
5.1.1.	<u>Geography</u>	51
5.1.2.	<u>Subdivision Regulations</u>	51
5.1.3.	<u>Air Quality (Non-Attainment)</u>	51
5.2.	<u>Land Use</u>	52
5.3.	<u>Transportation</u>	53
5.3.1.	<u>Roadway Network</u>	53
5.3.2.	<u>Public Transportation and Transit Service</u>	55
5.3.3.	<u>Biking and Walking</u>	57
5.3.4.	<u>Airport System</u>	59
5.3.5.	<u>Freight Movement</u>	60
6.	<u>Recent Efforts</u>	63
6.1.	<u>Regional Rail Corridor Study</u>	63
6.2.	<u>Dallas North Tollway Extension- 3, SRT to US 380</u>	63
6.3.	<u>Dallas North Tollway Extension- 4, US 380 to Grayson County Line</u>	63
6.4.	<u>President George Bush Turnpike- Eastern Extension</u>	64
6.5.	<u>Sam Rayburn Tollway (SRT/ SH 121)</u>	64
6.6.	<u>Collin County Outer Loop</u>	64
6.7.	<u>US 75 Corridor Study</u>	64
6.8.	<u>Blacklands Corridor Study</u>	65
7.	<u>Recommendations</u>	67
7.1.	<u>Thoroughfare Development</u>	69
7.1.1.	<u>Functionally Classified System of Thoroughfares</u>	69
7.1.2.	<u>Roadway Typical Standards</u>	70
7.1.3.	<u>Roadway Geometric Design Standards</u>	71
7.2.	<u>Public Transportation</u>	75
7.3.	<u>High Occupancy Vehicle Lanes</u>	75
7.4.	<u>Aviation</u>	76
7.5.	<u>Bicycle and Pedestrian</u>	76



7.6. Freight	77
8. Implementation.....	79
8.1. Continuing Planning Process.....	82
Appendices	i
Appendix A. Definitions	iii
Appendix B. Demographic Projections	xiii
Appendix C. Fiscally-Constrained Plan.....	xvii
Appendix D. Summary of Meetings	xxvii



List of Tables

Table 1: Municipalities completely contained within Collin County.....	16
Table 2: Municipalities NOT completely contained within Collin County	16
Table 3: Cities and Documents provided for Review	27
Table 4: Collin County Population Projections for City Area Groupings of TSZs.....	36
Table 5: Collin County Employment Projections for City Area Groupings of TSZs.....	37
Table 6: Collin County 2000 Land Use	52
Table 7: Collin County Geometric Design Standards	74
Table 8: Funding Requirements for Street and Aerial Projects	80
Table A: County Build-Out Projections: Population (Persons)	Appendix B
Table B: County Build-Out Projections: Employment (Jobs Within Collin Co.)...	Appendix B
Table C: City Estimates and Projections: Population (Persons)	Appendix B
Table D: City Estimates and Projections: Employment (Jobs Within Collin Co.)..	Appendix B
Table E: Sources of Funds, 2017 to 2020	Appendix D
Table F: Funding Requirements for Street and Arterial Projects, 2020.....	Appendix D
Table G: Summary Uses of Funds, 2020 Mobility Plan	Appendix D
Table H: Detailed uses of Funds, 2020 Mobility Plan	Appendix D



List of Figures

Figure 1: Collin County	xiv
Figure 2: Collin County Municipalities, City Limits, and Extraterritorial Jurisdictions	xvi
Figure 3: Collin County Mobility Plan – 2014 Update	xviii
Figure 4: Location of Collin County	1
Figure 5: Collin County Study Area	2
Figure 6: Collin County Population: Historic (1850-2010) and Projected (2010 – 2030)	3
Figure 7: Collin County Regional Trails Master Plan	10
Figure 8: Collin County Plan Methodology	19
Figure 9: Collin County Existing Roadways	21
Figure 10: 1982 Collin County Thoroughfare Plan	22
Figure 11: 1998 Collin County Thoroughfare Plan	22
Figure 12: 2002 Collin County Thoroughfare Plan	23
Figure 13 A: 2007 Collin County Thoroughfare Plan	23
Figure 13 B: 2011 Collin County Thoroughfare Plan	24
Figure 14: Environmental and Physical Constraints	25
Figure 15: Collin County Future Land Use Plan Map (Build Out)	28
Figure 16: Collin County Transportation Serial Zones and City Areas	30
Figure 17: Collin County Population and Employment Forecasts	32
Figure 18: Collin County Population Estimate – 2012	33
Figure 19: Collin County Population Estimate – 2020	33
Figure 20A: Collin County Population Estimate – 2035	33
Figure 20B: Collin County Population (Build-Out)	33
Figure 21: Collin County Employment Estimate – 2012	35
Figure 22: Collin County Employment Estimate – 2020	35
Figure 23A: Collin County Employment Estimate – 2035	35
Figure 23B: Collin County Employment (Build-Out)	35
Figure 24A: 2020 Level of Service (LOS)	39
Figure 24B: 2035 Level of Service LOS	40
Figure 25A: 2020 Network	42
Figure 25B: 2035 Network	43
Figure 26A: 2012 Daily Traffic Volume	45
Figure 26B: 2035 Daily Traffic Volume	46
Figure 27: NCTCOG Collin County 2000 Land Use	53
Figure 28: Collin County Hike & Bike Trail Mileage and Level of Service	58
Figure 29: Collin County Public Airports	60
Figure 30: Collin County Thoroughfare and Transit Plan	68
Figure 31: Typical Section – P6D and M6D Six Lanes Divided with Median	70
Figure 32: Typical Section – P4D and M4D Four Lanes Divided with Median	70
Figure 33: Typical Section – P4U and M4U Four Lanes	70
Figure 34: Projects Included in the Fiscally-Constrained Plan	81
Figure A: Projects Included in the Fiscally-Constrained Plan	Appendix D



Preface

The Collin County Mobility Plan is a comprehensive, multimodal plan for transportation systems that will serve the mobility needs of County residents and guide major transportation investments. The Mobility Plan includes a county-wide system of roadways, transit facilities, and hike-and-bike-trails that are needed to meet the travel needs of the County. The purpose of the Mobility Plan is to identify the transportation needs of area residents and businesses. It identifies the future transportation network that will be needed to serve projected population and employment growth and increased travel demand. The plan serves as a guide for major investment in improving transportation facilities and services. The plan responds to goals established for connectivity and mobility, environmental quality, community development, and safety. It identifies policies, programs and projects for implementation and continuing development, and it serves as a guide for local, state, and federal funding decisions.

According to the United States Census Bureau, Collin County, in 2010 to 2013, was the 33rd fastest growing county in the nation, with an annual population growth rate of 9.3% between 2010 and 2013. The County is home to three of the top 3 fastest growing cities in the state (Frisco, McKinney and Allen), for cities with over 50,000 population. According to the region's Metropolitan Planning Organization, the population is projected to cross the one million mark well before 2025.

With continuing growth, Collin County faces the challenge of meeting the transportation needs of its citizens and maintaining and improving the serviceability of the County's transportation system. In addition, delays due to accidents, construction, special events, and congestion affect the County's mobility and air quality. Moreover, Collin County is a designated an air-quality "non-attainment" area for the pollutant ozone. Increased ozone levels and reduced air quality lead to a potential reduction in the federal funding available for the County's transportation projects. In light of these factors, the current County Mobility Plan, last updated in 2011, requires a major update.

The preparation of this update to the Collin County Mobility Plan was a team effort by numerous agencies and organizations. Among these are the Collin County Commissioners Court, the Collin County Planning Board, the Collin County Engineering Department, all of the local municipal jurisdictions within the County, the North Central Texas Council of Governments, and the Jacobs consultant team. An intense public participation program was conducted to allow the opportunity for citizens to be involved in the planning process.



The planning area for the Mobility Plan includes all of Collin County. Municipalities within the County are responsible for planning for their respective incorporated areas and extra-territorial jurisdictions. The Collin County Mobility Plan provides continuity and coordination of planning between the municipalities and for incorporated areas outside the municipal jurisdictions.

Jacobs Engineering Group, Inc. was retained by Collin County to develop this update to the County Mobility Plan. Jacobs was assisted in the Plan Update process by Freese and Nichols, Inc; Alliance Transportation Group; and Strategic Community Solutions. The North Central Texas Council of Governments (NCTCOG) cooperated in the planning process by providing the regional travel demand model. Freese and Nichols developed the population and employment forecasts for the interim year (2020), the horizon year (2035), and ultimate “build-out”. Jacobs and Alliance Transportation Group used the regional travel demand model, and the population and employment forecasts to calculate the future travel demand for Collin County.



Executive Summary

Collin County is one of the 254 counties in the State of Texas, and is located in the north central region of the State of Texas. The County is a part of the Dallas - Fort Worth - Arlington Metropolitan area (DFW Metroplex). Collin County is bordered by Dallas County and Rockwall County on the south, Denton County on the west, Grayson County and Fannin County on the north, and Hunt County on the east.

The County experienced dramatic growth in the past 35 years, with its population growing from 66,920 in 1970, to an estimated 808,830 in 2012. The County population is projected to increase by 166 percent between 2000 and 2035, reaching more than 1.3 million people. Highway congestion is also forecast to increase dramatically in Collin County. According to NCTCOG, drivers in Collin County will spend 415,198 vehicle hours in delay in 2030, a 206 percent increase compared to delay in 2013. Finally, highway funding in Collin County is forecast to be insufficient to keep up with demand for construction needed to help reduce anticipated congestion. Region-wide, NCTCOG's Mobility 2035 – 2013 update plan notes that the region will experience a \$296.6 billion shortfall in transportation system component funding between now and 2035.

As the County population continues to grow, an increasing number of local residents will travel to employment sites within the County, rather than commuting to Dallas County (the county with the largest number of employers in the metropolitan area), or elsewhere. This high level of growth will place a great burden on the existing transportation system. Since Collin County is designated “non-attainment” for the pollutant ozone, increased ozone levels and reduced air quality can cause the reduction of federal funding available for transportation projects in the future. Consequently, a comprehensive, cooperative, and continuing approach toward alleviating existing and projected mobility problems is required in concert with NCTCOG's 2035 Regional Mobility Plan.

The study area for Collin County Mobility Plan is shown in **Figure 1**.

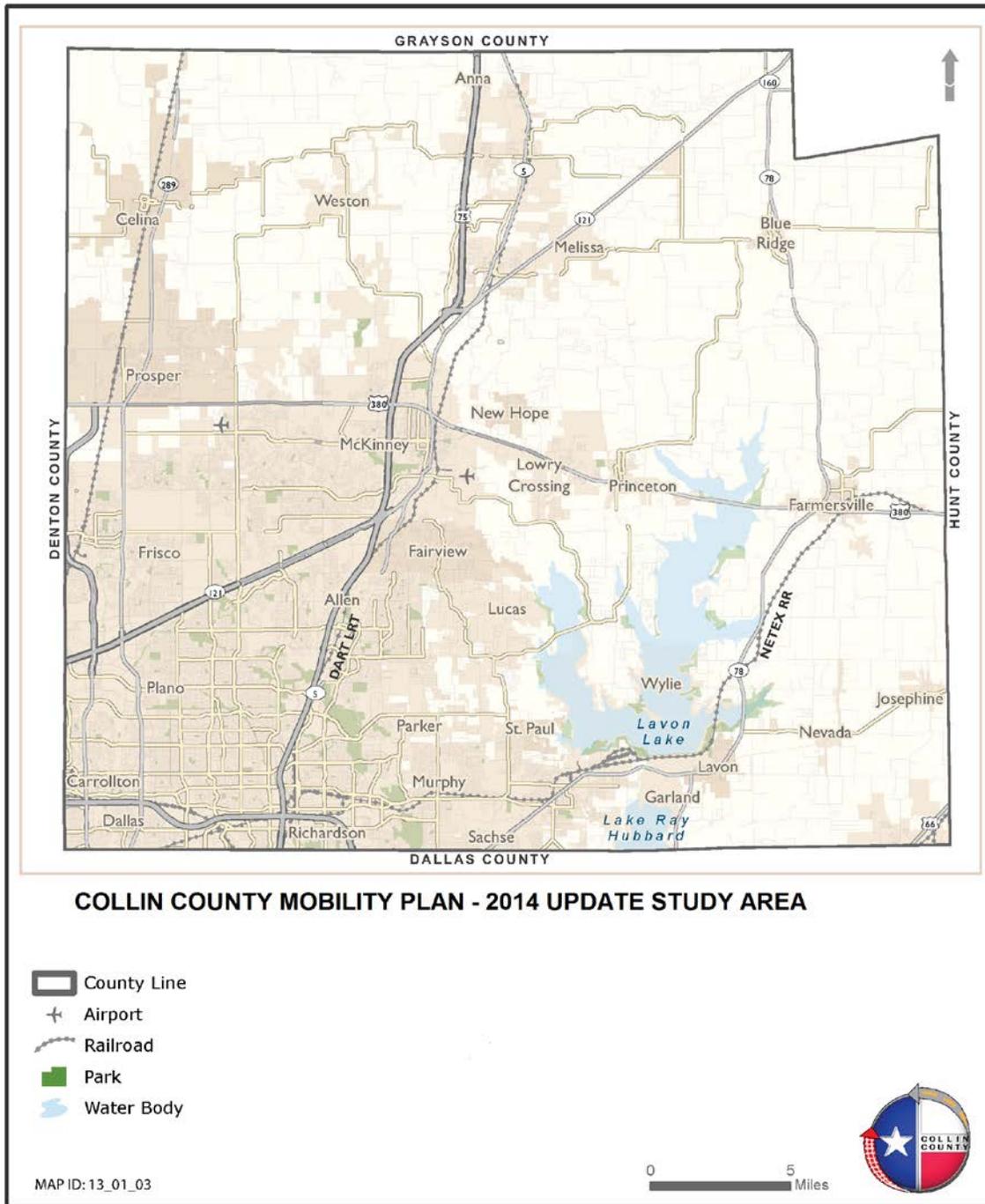


Figure 1: Collin County



The Collin County Mobility Plan, or the Mobility Plan, is the officially adopted plan to identify the transportation needs of the County. It identifies the future transportation network needed to meet the travel demand of the projected population/employment growth. The Mobility Plan ensures coordination between transportation improvement efforts by various entities and jurisdictions in the County by drawing upon previous planning efforts, and provides a comprehensive guide to transportation plans, projects, and policies.

The Mobility Plan should be updated every five years to include the changing transportation needs of the County. Since the last plan update in 2011, the County has experienced faster population and employment growth than before, and many previously rural areas of the County have also undergone rapid urbanization. The increased population and employment result in higher travel demand which warrants expansion of the transportation network in the County. The primary objective of this update is to develop a multi-modal transportation plan for the County through the year 2035. The primary objective of the revised Mobility Plan is to ensure reservation of adequate right of way on appropriate alignments and of sufficient width to allow the orderly and efficient expansion and improvement of the thoroughfare system to serve existing and future transportation needs.

The Collin County Planning Board acted as the steering committee for the Mobility Plan Update, providing recommendations to the Collin County Commissioners Court. The final result and product of the study are two documents – the Mobility Plan report; which describes the goals and objectives, policies, projects, funding, and implementation aspects of the plan; and the Thoroughfare and Transit Plan map; which shows the existing and proposed alignments, functional classifications of thoroughfares, and other transportation facilities. Upon completion of this process, the Mobility Plan was approved by Collin County Planning Board. The Collin County Commissioners Court adopted the Collin County Mobility Plan through resolution.

The Mobility Plan is the product of a team effort by a number of agencies and organizations. Among these are the Collin County Commissioners Court, Collin County Planning Board, Collin County Engineering Department, municipalities within the County, and the North Central Texas Council of Governments.

An Initial project kick-off meeting with County officials and staff was held on June 7, 2012 to discuss the overall strategy for the project. Thereafter, bi-monthly meetings were held with the Collin County Planning Board to coordinate and review the planning efforts.



The Jacobs consultant team met with staff and official representatives of the municipalities within the County during the course of the project. A series of four community workshop meetings for obtaining input from interested citizens were held in 2013, on February 19 (Plano), February 20 (Wylie), February 25 (Prosper), and February 26 (McKinney), when the consultant team was compiling relevant data pertaining to demographics, land use, transportation (including transit), and hike-and-bike trails from each of the jurisdictions. A workshop for municipalities with the county was conducted on November 7, 2013. Individual meetings with the municipalities were conducted upon request by the municipalities. Many of the municipalities were interviewed more than once to discuss certain complex issues. The incorporated areas and extraterritorial jurisdictions of all the municipalities are shown in **Figure 2**.

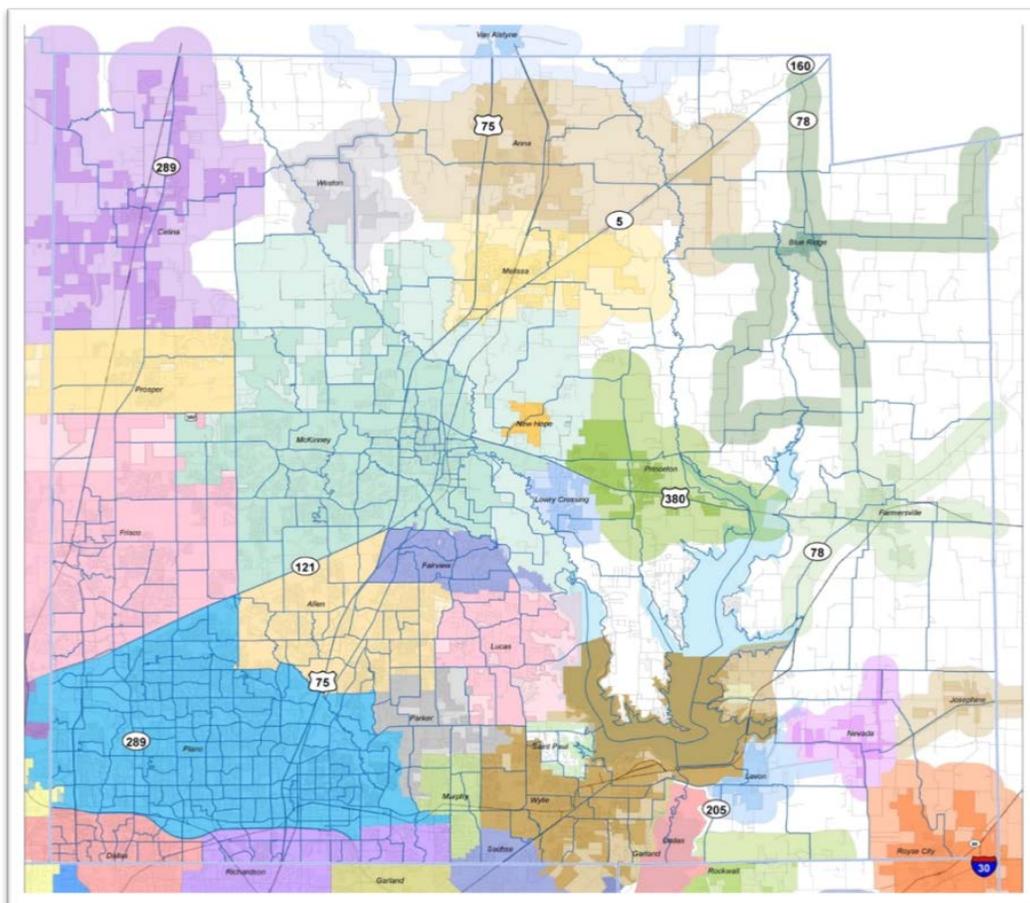


Figure 2: Collin County Municipalities City Limits and Extraterritorial Jurisdictions



A number of other agencies and organizations provided major input for the Collin County Mobility Plan 2014 Update. NCTCOG prepares the long range (20 years) regional transportation plans for the entire metropolitan area, and also prepares the annual Unified Planning Work Program (UPWP), and Transportation Improvement Program (TIP) to guide the use of available Federal funding for transportation improvements, consistent with Federal requirements and guidelines. The Federal Aid Highway Program, administered by the Federal Highway Administration (FHWA) and the Texas Department of Transportation (TxDOT), is the major funding source for development of highways and many urban arterial improvements in Texas cities. The North Texas Tollway Authority (NTTA) is a political subdivision of the State of Texas, and is empowered to acquire, construct, maintain, repair, and operate turnpike projects. Dallas Area Rapid Transit Authority (DART) operates Light Rail Transit (LRT) and fixed route transit bus and para-transit service within portions of Collin County. TAPS Public Transit operates fixed routes and on-demand curb-to-curb public transportation on weekdays for Collin County rural areas and for the Cities of Allen and McKinney. The Union Pacific and Burlington Northern Santa Fe Railroads own and operate freight rail lines that bisect the County. The Northeast Texas Rural Transit District (NETEX) owns the abandoned rail line that formerly served southeast Collin County and the northeast Texas region.

The updated Collin County Mobility Plan is shown in **Figure 3**. The plan identifies new and improved thoroughfares, as well as transit facilities. Existing data were compiled from reports and documents published by these and many other organizations. The consulting team assembled existing Comprehensive Plans, Land Use Plans, and Transportation Plans available for the various local jurisdictions. For areas that did not have plans available, planning assumptions were used to develop the county-wide plan. These plans provided the basis for developing “ultimate” population and employment projections for the Collin County planning area.

Demographic estimates were developed for the base year (2012), and projections were developed for the interim year (2020), the horizon year (2035), and for “build-out”. The “build-out” projections reflect the population and employment that will occur if the various local jurisdictions “build-out” according to their existing adopted plans. Collin County is developing or growing generally from the southwest (e.g., Dallas, Plano, and Richardson) to the northeast/east portion of the County (e.g., Frisco, Allen, McKinney, Prosper, Celina, Anna, Melissa, Blue Ridge, Farmersville, Josephine, etc.)

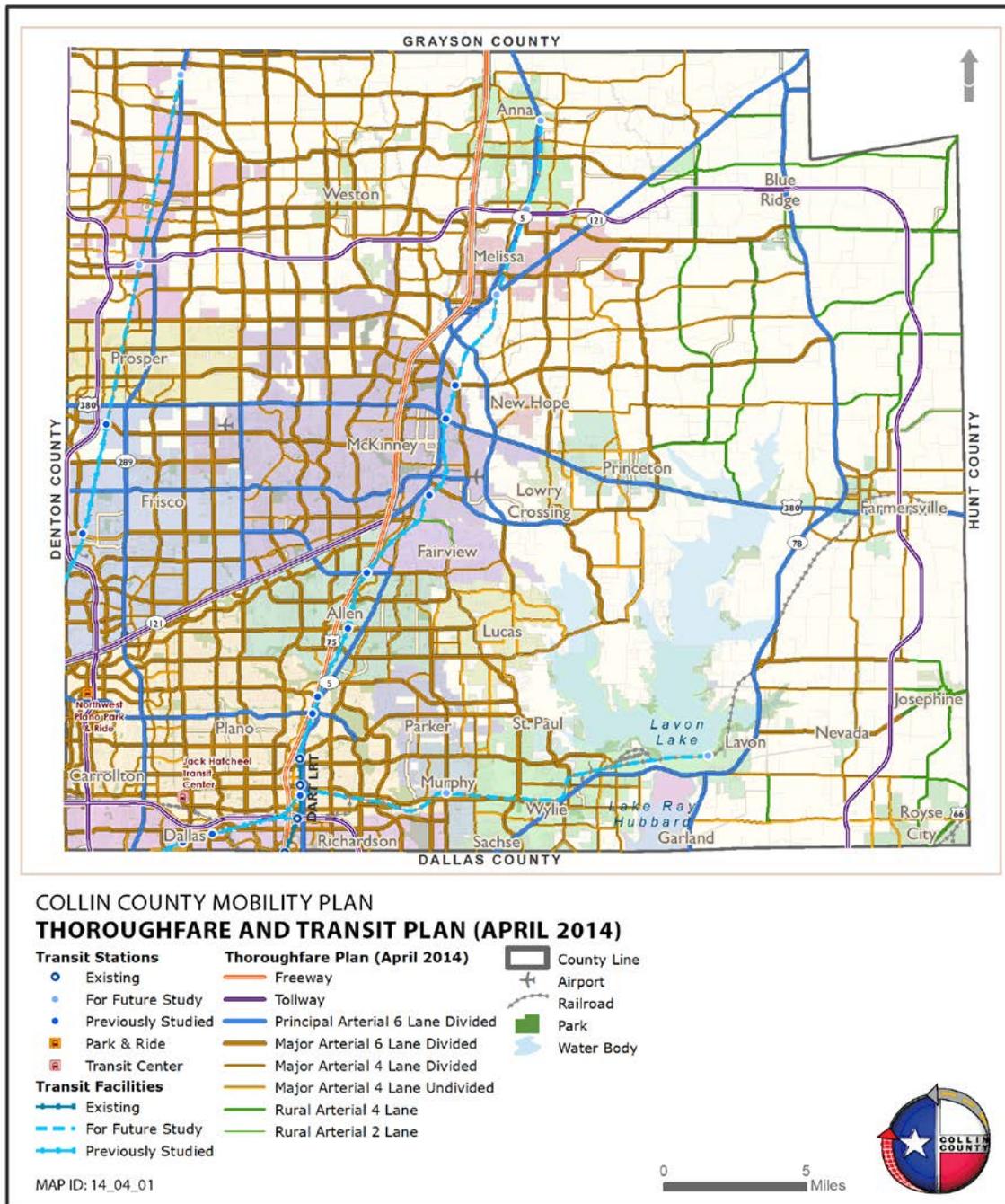


Figure 3: Collin County Mobility Plan – 2014 Update



Cities in the southwestern portion of the County will reach build-out earlier than cities in the northeastern/eastern portion. As a whole, the County is projected to reach its “build-out” or ultimate population of approximately 2,088,000 people in approximately 2054. This would be 2.6 times the base (year 2012) population of approximately 808,830. The County will reach its “build-out” or ultimate employment with approximately 1,168,000 jobs within the County. This would be 3.6 times the base (year 2012) employment of 325,177.

The greatest concentration of population and employment will be located in the western portion of the County. This area extends from Plano, Dallas, Richardson, Murphy, Sachse, and Wylie; northward to Prosper, Celina, Weston, Anna, and Melissa, and also includes the cities of Allen, Frisco, McKinney, and Fairview. This area reflects the County’s expanding urbanized area, with residential development consisting of a variety of housing types and densities and non-residential development ranging from retail to manufacturing.

In light of the updated demographic projections, future year 2020 and 2035 transportation networks were identified. Considering the lifecycle of typical transportation improvement projects requires over ten years from inception to completion, the 2020 network was created with the assumption that projects currently underway or already committed (in planning or construction stages) will be in place by 2020. The 2035 network was created based on increased travel demands for the projected future population and employment growth.

With the demographic projections and transportation networks available, the Dallas – Fort Worth Regional Travel Model for the Expanded Area (DFX), a computer travel demand model, was used to determine how many trips will be generated, how these trips will be distributed across the study area, what mode of travel (auto, carpool, transit etc.) travelers will use, and what routes trip makers will select (based on travel delay and other constraints) to reach their destination. The NCTCOG Travel Model Development Group performed initial model runs for year 2012.



1. Introduction

Collin County is one of the 254 counties in the State of Texas, and is located in the northeastern part of the state. The County is a part of the Dallas - Fort Worth - Arlington Metropolitan area (DFW Metroplex), and lies just north of the Dallas County.



Figure 4: Location of Collin County

Collin County was demarked from Fannin County on April 3, 1846, and named for Collin McKinney – one of the first settlers of the county, and a signer of the Texas Declaration of Independence. Like the county, McKinney - the county seat – was named for Collin McKinney.

The first phase of development occurred during the early period of the county's history, from 1840s to 1860. An offer of land grants by the Peters colony attracted settlers to the area in the early 1840s. The majority of first settlers were farmers who lived near streams, and established small, family-operated farms. In 1860, the county's population



was 9,264. Between 1840 and 1870, lack of transportation facilities, limited markets, and absence of mechanized farm-equipment restricted the agricultural production of the county.

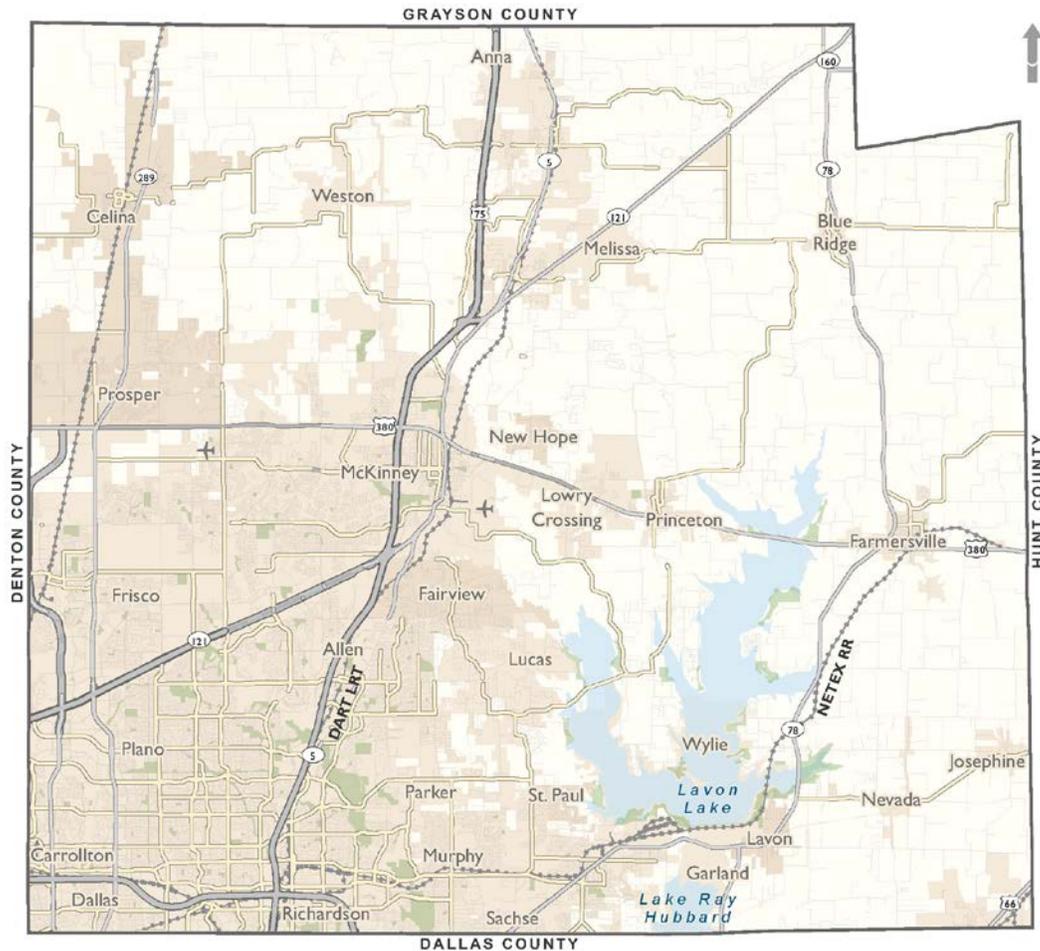


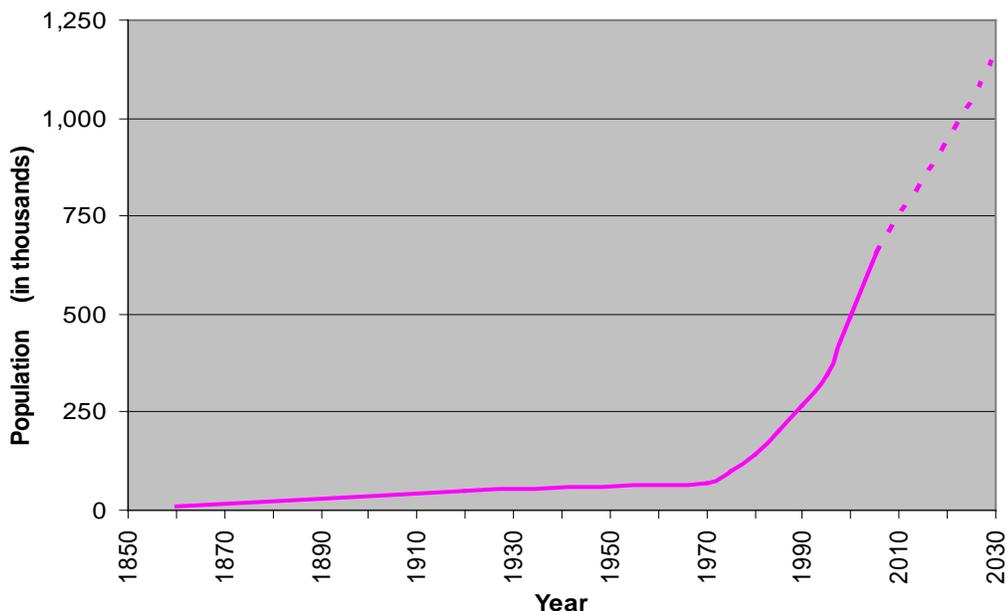
Figure 5: Collin County Study Area

The arrival of the railroads removed these obstacles and initiated a fifty-year period of economic growth. By 1890, six railroads crisscrossed the county, connecting farmers to markets throughout Texas. By 1920, the population of the county was 49,609. New roads, combined with SH 289 provided county residents easy access to Dallas, Fort Worth, and Waco.

During the next forty years, population declined. The Great Depression, mechanization of farms, and employment opportunities outside the county contributed to the drop in population. The county had a population of 41,247 in 1960.



By 1950 the economy recovered. The economic growth between 1960 and 1980 accompanied comparable population growth. Collin County's population increased to 144,576 in 1980. By 1990, the county grew to 264,036, nearly double what it had been just a decade before.



Source: United States Census Bureau

Figure 6: Collin County Population: Historic (1850-2010) and Projected (2010 – 2030)

From 2010 to 2012, Collin County was the 6th fastest growing county in Texas, and the 36th fastest growing county in the nation according to the U.S. Census Bureau. The County has experienced dramatic growth, with its population growing from 66,920 in 1970 to 491,675 by 2000, and to an estimated 854,778 in 2013. From 2010 to 2012, Frisco and McKinney experienced annual population growth rates in excess of 9%, and Plano's growth rate was almost 5%. The North Central Texas Council of Governments estimates that these high rates of growth will continue into the future. Collin County's population is projected to increase by 166 percent between 2012 and 2035, reaching more than 1.3 million people.

Highway congestion is forecast to increase dramatically in Collin County. According to NCTCOG, 26.4% of all principal arterial lane miles in Collin County will experience Level of Service "F" during peak periods in 2030, a 45% increase compared to 2007. Collin County drivers will spend 327% more time stuck in traffic in 2030.



Finally, highway funding for Collin County is forecast to be unable to keep up with demand for construction needed to help reduce anticipated congestion. Region-wide, NCTCOG estimates that the region will experience a \$58.6 (2006 dollars) billion shortfall in transportation system component funding between now and 2030.

As the County continues to grow, an increasing number of local residents will travel to employment sites within the County, whether to Dallas (the city with maximum employers in the metropolitan area), or elsewhere. This high level of growth will place a great burden on the County's existing transportation system.

With continuing growth, the County faces the challenge of meeting the transportation needs of its citizens, and maintaining or improving the serviceability of the County's transportation system with increased budget constraints. In addition, delays due to accidents, construction, special events, and congestion will affect the County's mobility and air quality. Since Collin County is designated "non-attainment" for the pollutant ozone, increased ozone levels and reduced air quality can cause the reduction of federal funding available for transportation projects in the future. Consequently, a comprehensive, cooperative, and continuing approach toward alleviating existing and projected mobility problems is required in concert with NCTCOG's Regional Mobility 2035 Plan.

Growth experienced through the entire DFW Metroplex has resulted in major expansions to the regional transportation system. These expansions have directly, and indirectly, affected Collin County. Over the last several years, various entities, including the Texas Department of Transportation (TxDOT), the North Texas Tollway Authority (NTTA) and the Dallas Area Rapid Transit (DART) have initiated several major projects. These projects are in various stages of completion, with some recently opened for public use.



2. The Plan

The Collin County Mobility Plan, or the Mobility Plan, is the officially adopted plan to identify the transportation needs of the County. It identifies the future transportation network needed to meet the travel demand of the projected population / employment growth. The Mobility Plan is adopted to guide transportation system improvements, including planned expansion of the highways and county roads, extension of transit services, and development of hike-and-bike trail network. It provides the County with a guide to transportation choices, improved air quality, and coordinated land use that can potentially enhance the quality of life. The purpose of the Mobility Plan is to provide the County with a planning tool that may be used to evaluate future needs as conditions change.

2.1. Goals and Objectives

Goals and objectives for transportation planning for Collin County are identified in this section. Policies to guide further transportation planning and investment, as well as a process to keep the plan and the transportation model updated are needed to

1. Adequately maintain existing transportation infrastructure;
2. Build and expand a more balanced transportation system;
3. Reduce congestion and improve traffic flow;
4. Enhance the County's natural environment and air quality;
5. Enhance the County's economic competitiveness; and
6. Improve travel safety;
7. Develop additional new funding sources;

The goal of the Mobility Plan is to establish a more balanced transportation system which provides modal choices and improves mobility by adding system capacity and, at the same time, expands transit, pedestrian, and bicycle travel; mitigates adverse impacts on existing communities; and improves quality of life for residents. The Plan also enhances the County's natural environment and air quality by improving environmental quality, conserving transportation energy, and preserving sensitive environmental areas. The objectives include the following considerations:



- **Community Development:** Enhance the County’s economic competitiveness by implementing sustainable development integrating economic, social equity, and environmental values.
- **Safety and Security:** Improve travel safety to minimize accidents and fatalities, and decrease the risk of injury or property damage around transportation facilities.
- **Funding for Construction and Maintenance:** The primary source of revenue for construction, operation, and maintenance of transportation facilities includes federal and state motor fuel taxes, state vehicle registration fees, dedicated transportation authority sales taxes, toll road revenue, and local government bond programs.
- **Education and Inter-governmental Coordination:** Collaborate with transportation officials in Collin County, North Central Texas, and at the state and federal level, to coordinate effective transportation solutions.

2.2. Relationship with other Plans and Programs

The Mobility Plan ensures coordination between transportation improvement efforts by various entities and jurisdictions in the County by drawing upon previous planning efforts, and provides a comprehensive guide to transportation plans, projects and policies of Collin County. A number of government and non-government agencies manage various transportation and related services and networks in any given area. These agencies may be authorized by federal, state, or local laws to develop and manage various systems. Some of these systems are directly or indirectly related to transportation facilities. Many such agencies operate some of the transportation facilities and plan for their improvements.

As part of the development of the Mobility Plan, a wide range of planning studies were reviewed to ensure that the plan update would be consistent with adopted land use and transportation plans in Collin County. The plans and studies reviewed are described in the following paragraphs.

2.2.1. National Highway System

The National Highway System (NHS) is a 163,000-mile system of interconnected principal arterial routes of national importance. The NHS system includes all Interstate System segments, all strategic highways and their connectors, and any other urban or rural “Principal Arterials” meeting the goals of the NHS. By providing these essential linkages



between different modes of transportation, NHS creates a seamless network for the rapid movement of people and products across the nation.

2.2.2. Mobility 2035 Metropolitan Transportation Plan

The Regional Metropolitan Transportation Plan – Mobility 2035 (MTP) is a comprehensive, multi-modal blueprint for transportation systems and services aimed at meeting the mobility and financial needs of the Dallas-Fort Worth metropolitan area. The MTP, prepared by the NCTCOG, identifies most of the southern and western areas of the County as “areas of severe peak-period congestion”, especially along US 75, Dallas North Tollway, President George Bush Turnpike, SH 121 and Sam Rayburn Tollway.

2.2.3. Regional Thoroughfare Plan

The Regional Thoroughfare Plan (RTP) establishes a network that incorporates the primary features of each city’s thoroughfare plans. The RTP identifies the ultimate system of arterials when the region is completely developed. City and county plans were incorporated where appropriate to indicate the future proposed thoroughfares that will carry traffic across multiple jurisdictions. The RTP gives neighboring communities an opportunity to see how individual roadway systems affect the entire region and not just one city.

2.2.4. Texas Metropolitan Mobility Plan

The Texas Metropolitan Mobility Plan (TMMP) addresses a statewide initiative to quantify long-range needs within the larger metropolitan areas of the state. Unlike the region’s long-range Metropolitan Transportation Plan, it is not constrained by anticipated revenues, and focuses on the magnitude of unmet transportation needs for the region. The TMMP identifies the US 75 corridor from central Collin County to the Dallas central business district, and SH 121 from DFW International Airport to central Collin County as the corridors with largest capacity deficiencies in the region.

2.2.5. Collin County Public Transportation Plan

The Collin County Public Transportation Plan (CCPTP) was completed by the North Central Texas of Governments (NCTCOG) in May 2004, in response to a request for assistance by the cities of Allen, Frisco, McKinney, and Collin County, to analyze demand for public transportation and providing recommendations, cost estimates, and an implementation schedule.



2.2.6. Collin County Transit Study

This 2006 study examined the feasibility of extending transit services within Collin County. The NCTCOG, in cooperation with the City of Allen, the City of Frisco, the City of McKinney, and Collin County, conducted this study. Options for the extension of commuter rail and bus services to the Cities of Allen, Frisco, and McKinney were evaluated. Potential rail transit expansion include extending the DART Red Line northward to McKinney and the construction of a commuter rail line northward from SRT to Frisco. Potential bus services would provide service between major origin and destination points, such as transit centers and retail / employment centers.

2.2.7. Collin County 2003 Bond Program

The residents of Collin County approved a ballot measure in 2003, which approved the 2003 Collin County Bond Program. The 2003 Bond Program provided \$142 million in bond funding for transportation improvements, including 65 projects totaling \$291 million in project cost. The 2003 Bond Program projects created a majority of the transportation network for the County, including new roads, upgrades to existing roads and other transportation projects such as sidewalks, trails, or transit improvements to increase mobility in the Collin County area.

The 2003 Collin County Bond Program also included improvements for recreational facilities and parks. The 2003 Bond Program was preceded by the 1999 Collin County Bond Program, which resulted in 51 projects at a total project cost of \$124 million.

2.2.8. Collin County 2007 Bond Program

The 2007 bond propositions were developed by citizen committees, which evaluated and determined viable projects for the program. Committee members were nominated by the Commissioners Court and included representatives from municipalities and unincorporated areas of the County. The committees were supported by engineers, architects, urban planners, and other specialists. The mission of the citizen committees was to make recommendations.

The 2007 Bond Program consists of three components – facilities, parks and open space, and transportation - with \$76.3 million, \$17 million, and \$235.6 million in funding respectively. The 2007 Transportation Bond Projects included \$236 million bond funding for 113 projects totaling 146 centerline miles and \$485 million in project costs



The list of road projects for inclusion in the bond program was developed based on traffic, population, and employment projections. The 2007 bond program funded 113 transportation projects costing \$235.6 million, and an additional 66 projects were identified to be funded if additional monies were secured or made available from the “most critical” project list. Discretionary funds remaining from the 2007 Bond Program are being reprogrammed to support other projects to address immediate needs.

2.2.9. Parks and Open Space Strategic Plan

The Parks and Open Space Strategic Plan is a guidebook for adding new parks and open space resources to the 7,400 acres of existing municipally owned parks and open spaces in Collin County. The recommendations within the Strategic Plan are intended to work with the jurisdictions that have park system plans (such as Allen, Frisco, McKinney, Plano, and Richardson), as well as those smaller communities that do not have park system plans (such as Josephine, Melissa, and Celina). The plan encourages coordination between all levels of government, as well as the partnering with private, non-profit, religious and citizen resources.

2.2.10. Collin County Regional Trails Master Plan

The Collin County Regional Trails Master Plan was developed to provide coordination and connectivity between cities and towns for the development of a county-wide trail system. The plan builds upon the planning efforts of the 31 cities and towns within the county and other regional studies, such as the North Central Texas Council of Governments’ Regional Veloweb and the Six Cities Trails Plan in Dallas and Collin Counties.

The key components of the Trails Master Plan are to define high-priority trail corridors that provide regional linkages and identify and address gaps between cities. Doing so results in a plan that encourages corridor preservation and multi-jurisdictional implementation. The plan serves as a tool that gives guidance to Collin County for evaluating requests submitted as part of its County Parks and Open Space Project Funding Assistance Program. The Regional Trails Master Plan for Collin County is shown in **Figure 7**.

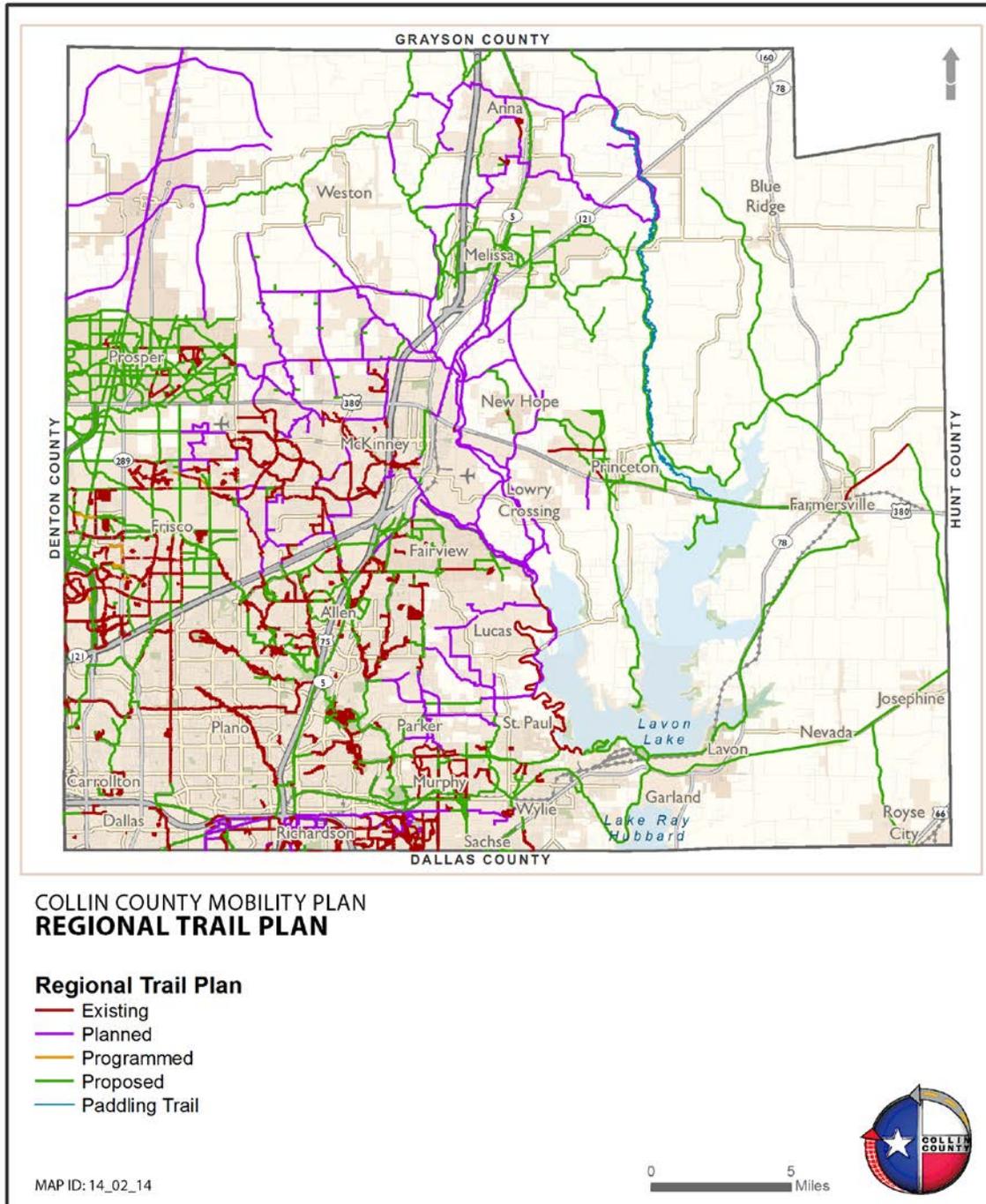


Figure 7: Collin County Regional Trails Master Plan



2.2.11. Municipal Comprehensive Plans and Thoroughfare Plans

Municipalities in Collin County have adopted comprehensive plans that will have significant impacts on transportation planning of the County. All of the adopted plans were reviewed and compared with the Collin County Mobility Plan, and incorporated into this update where appropriate and justifiable for regional importance and need based on future Level of Service. These plans are discussed in further detail under section 4.1.3

2.3. The Plan Update

The Collin County Thoroughfare Plan was originally prepared and adopted in 1981. In 1998, the thoroughfare plan was revised, and renamed as the Collin County Mobility Plan. In 2000, a comprehensive update of the Mobility Plan was carried out. The plan was again updated in 2002 and in 2007. In 2011, modifications to the plan were approved by the County Commissioners Court.

The Mobility Plan should be periodically updated to include the changing transportation needs of the County. Since the last update in 2002, the County experienced faster population and employment growth than before, and the previously under-developed areas of the County also began rapid growth. The increased travel demands generated by population and employment growth warrant the expansion of the transportation network in the County.

As a result of the rapid growth, the transportation agencies are undertaking a number of transportation improvement projects to limit the negative impact on the transportation system. Development of the Collin County Outer Loop and extension of the Dallas North Tollway and the President George Bush Turnpike are underway. Tolling of SH 121 by construction of the Sam Rayburn Tollway completed in 2007. Light rail transit service in Collin County is in the early planning stages. DART's Red Line currently extends to the Parker Road Station in north Plano.

The primary goal of the Mobility Plan 2014 Update is to develop an updated, multi-modal transportation plan for the County through the year 2035. The updated plan reflects current development trends and anticipated future growth, and recommends innovative solutions to transportation needs. The objectives of the revised Mobility Plan are to coordinate thoroughfare planning among the municipalities within the county, and to ensure reservation of adequate right of way on appropriate alignments and of sufficient width to



allow the orderly and efficient expansion and improvement of the thoroughfare system to serve existing and future transportation needs.

The Collin County Planning Board acted as the Steering Committee for the Mobility Plan 2014 Update. The Planning Board is made up of elected and appointed officials from various jurisdictions in the County. The Planning Board acted as the Technical Advisory Group (TAG), reviewing the draft plan and providing recommendations to the Commissioners Court. Upon completion of this process, initial approval of the Plan was sought from the Planning Board. In April of 2014, the Collin County Commissioners Court will adopt the Collin County Mobility Plan 2014 Update through resolution.

2.3.1. Scope

While other long range development plans look at foreseeable changes over a 10 or 20 year period, thoroughfare planning should consider an even longer range perspective. The Mobility Plan 2014 Update was carried out to guide transportation policy and program development to and beyond the designated 2035 horizon year. The plan was developed to coordinate the integration between land use, growth, development patterns, and the needed transportation infrastructure. It required systematic analysis of transportation needs, long-range comprehensive planning, and identification of future improvements to serve the County's continuing growth and development. The updated plan also includes a fiscally constrained plan for the year 2020, based upon estimated capital costs and projected future funding availability for transportation improvements. The fiscally constrained plan identifies thoroughfare improvements needed to address severe deficiencies in future Level of Service for the existing and planned roadway network.

2.3.2. Plan Organization

To accommodate the projected growth in Collin County, a comprehensive multi-modal approach was deemed necessary. Therefore, the Mobility Plan consists of three distinct elements:

1. **A Thoroughfare Plan**, which includes the recommended road network, proposed alignments, functional classification of thoroughfares, and location of other transportation facilities. The Mobility Plan is primarily used for the physical development of thoroughfares in the County.



-
2. **A Transit Plan**, which includes the recommended transit network, proposed alignments for transit services (commuter or light rail, or bus), and location of transit terminals. It primarily deals with public transportation and transit facilities.
 3. **A Hike-and-Bike Trails Plan**, which includes recommended trail network, proposed alignment of pedestrian and bike trails.

The result and product of the study are two documents – a report that discusses the goals and objectives, policies, projects, funding, and implementation aspects of the plan, and the Thoroughfare and Transit Plan map that shows the proposed alignments and classification of the thoroughfares, and location of other transportation plan elements.



3. The Partners

The Mobility Plan is a team effort of a number of agencies and organizations. Among these are Collin County Commissioners Court, Collin County Planning Board, Collin County Engineering Department, local municipal jurisdictions within the County, and NCTCOG.

3.1. The County

The plan was updated while working closely with the County and City officials and staff to create a plan that emphasizes the interrelationships between land use, transportation issues, and other infrastructure extensions. An initial project kick-off meeting with County officials and staff was held on June 7, 2012, to discuss the overall strategy for the project. Thereafter, monthly meetings were held with the Planning Board appointed by the Commissioner's Court to coordinate and review the efforts.

The Draft Mobility Plan 2014 Update will be presented to the Collin County Commissioner's Court and the Planning Board for review and adoption in April of 2014.

3.2. The Cities

There are 30 incorporated jurisdictions in Collin County, many of which are completely contained within the County. **Table 1** lists the jurisdictions that are completely contained within Collin County. Some of the jurisdictions are NOT completely contained in the County, and have only a part of their jurisdiction area in the neighboring counties. Table 2 lists cities NOT completely contained within Collin County.



Table 1: Municipalities completely contained within Collin County

Jurisdiction	Jurisdiction
Allen	Melissa
Anna	Murphy
Blue Ridge	Nevada
Celina	New Hope
Fairview	Parker
Farmersville	Princeton
Lavon	Saint Paul
Lucas	Weston
McKinney	

Table 2: Municipalities NOT completely contained within Collin County

Jurisdiction	Jurisdiction
Carrollton	Prosper
Dallas	Richardson
Frisco	Royse City
Garland	Sachse
Josephine	Van Alstyne
Lowry Crossing	Wylie
Plano	

The Collin County Engineering Department staff and the Jacobs consultant team provided the draft plan for review by the 30 municipal jurisdictions in the county during the course of the project. Individual meetings were conducted with the municipalities that responded with review comments and proposed changes inside their jurisdictions. Many of



the jurisdictions were interviewed more than once to discuss certain complex issues. Most of the meetings with municipalities were held during the later stages of the project when the consultant team had reviewed the municipal plans from each of the jurisdictions and prepared the initial draft of the updated county plan.

3.3. Transportation Agencies

A number of other agencies and organizations have a major influence on the transportation system in Collin County. Those entities are identified in the following paragraphs.

3.3.1. North Central Texas Council of Governments

North Central Texas Council of Governments (NCTCOG) is a voluntary association of, by and for local governments, and was established to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating sound regional development. NCTCOG also serves as the Metropolitan Planning Organization for regional transportation planning in the 16-county Metroplex Area including Collin County.

The plans and programs of the NCTCOG facilitate the development, management, and operation of an integrated, inter-modal transportation system that enables safe, efficient, and economic movement of both people and goods. NCTCOG prepares the long range (20 years) transportation plans for the entire metropolitan area, and also prepare the annual Unified Planning Work Program (UPWP), and Transportation Improvement Program (TIP) to guide the use of available Federal funding for transportation improvements, consistent with Federal requirements and guidelines.

3.3.2. Texas Department of Transportation

The system of Interstate Highways, U.S. and State Highways, and other Federal Aid facilities, in an urban area, comprises a substantial portion of the city's major street and highway system. The Texas Department of Transportation constructs and maintains many of the thoroughfares in Collin County, as it does throughout the State of Texas.

The Federal Aid Highway Program, administered by the Federal Highway Administration (FHWA) and the Texas Department of Transportation (TxDOT), is the major funding source for development of highways and many urban arterial improvements in Texas cities.



3.3.3. North Texas Tollway Authority

The North Texas Tollway Authority (NTTA) is a political subdivision of the State of Texas, and is empowered to acquire, construct, maintain, repair, and operate turnpike projects. NTTA has representatives from Collin, Denton, Dallas, and Tarrant counties, as well as one surrounding county, on its Board of Directors. NTTA operates the Dallas North Tollway (DNT), the President George Bush Tollway (PGBT), and the Sam Rayburn Tollway (SRT).

3.3.4. Dallas Area Rapid Transit Authority

Dallas Area Rapid Transit Authority (DART) operates Light Rail Transit (LRT) and fixed route transit bus service within portions of the County. The Cities of Carrollton, Garland, Plano, and Richardson are the only member cities of DART in Collin County. DART is currently planning extension of the LRT service along the North Central corridor, and the North cross-town corridor within the Cotton Belt Railroad right of way.

3.3.5. TAPS Public Transit

TAPS Public Transit operates fixed route and on-demand curb-to-curb public transportation for Collin County Rural Areas and for the Cities of Allen and McKinney. TAPS buses run Monday-Friday with the earliest available pickup time at 6:00am and the latest available pickup time at 5:30pm. TAPS does not provide service in Collin County on Saturday or Sunday. TAPS also provides city bus service in the Cities of Allen and McKinney. TAPS vehicles are not allowed to pick up or deliver in Plano, except that TAPS Public Transit provides express commuter service from Sherman and McKinney to DART's Parker Road Station in Plano.

3.3.6. Railroads

The Union Pacific and Burlington Northern Santa Fe Railroads own and operate rail lines that bisect the County. Collin County is a member county of the Northeast Texas Rural Rail District (NETEX). NETEX owns the Cotton Belt railroad right of way that once served southeast Collin County and the northeast Texas region.

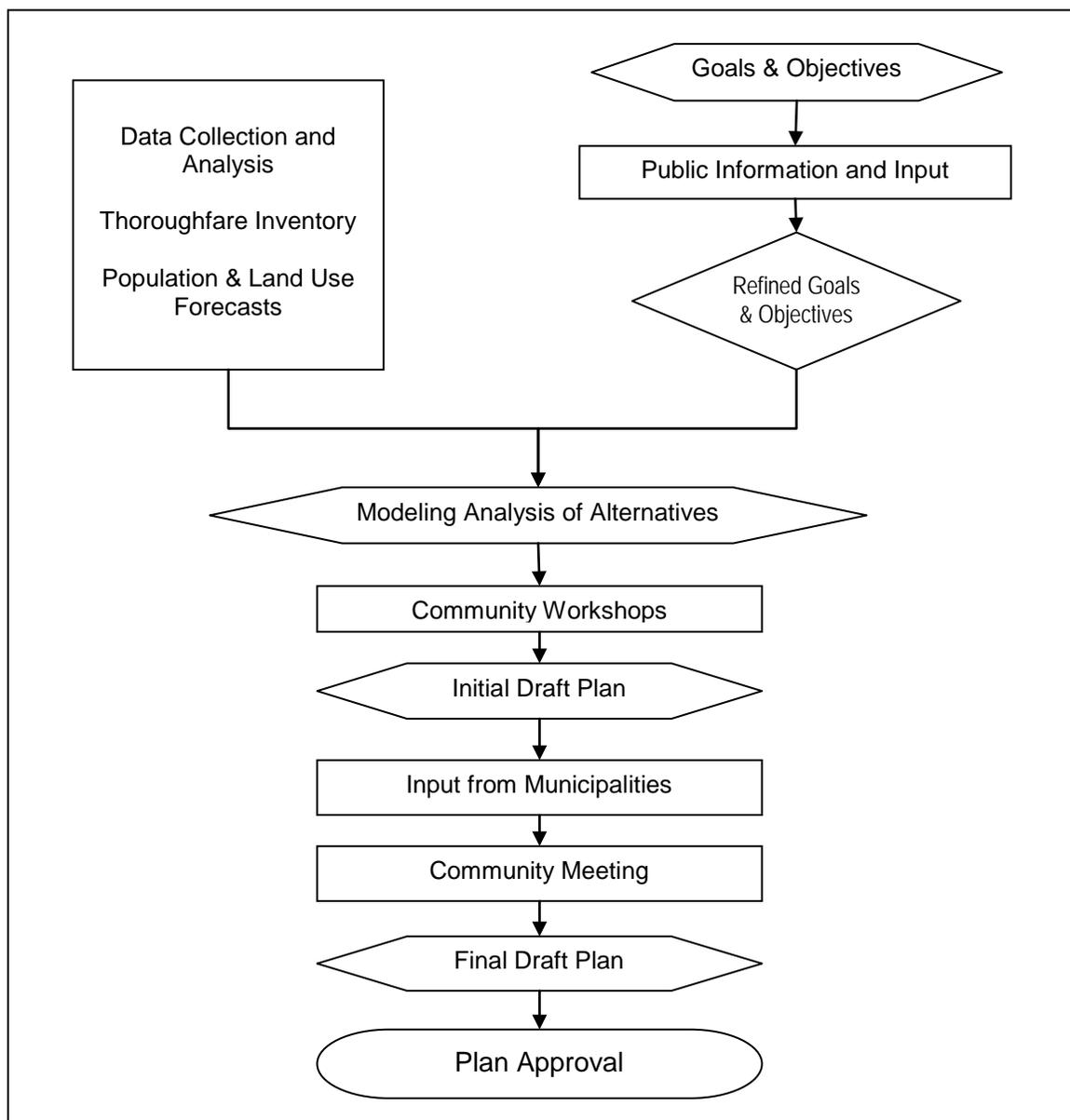


4. The Planning Process

The process of updating the Collin County Mobility Plan was divided into three activity-oriented tasks, illustrated in **Figure 8**, and itemized below:

- Data Collection
- NCTCOG Model Coordination and Analysis
- Public Involvement

Figure 8: Collin County Plan Methodology





4.1. Data Collection

A large amount of data was collected, compiled, analyzed, and reviewed to guide the plan update process. The data collection activities are described in the following paragraphs.

4.1.1. Thoroughfare System Inventory

Existing data sets and models were compiled from previously published reports from sources including Collin County, municipalities within Collin County, Texas Department of Transportation (TxDOT), North Central Texas Council of Governments (NCTCOG), North Texas Tollway Authority (NTTA), Dallas Area Rapid Transit (DART), and U.S. Census Bureau. The 2035 Regional Mobility Plan, which includes the adopted regional plan of freeways, tollways, regional arterials, rail transit, HOV lanes, and hike-and-bike trails, was obtained from the NCTCOG. Adopted comprehensive plans and land use plans were obtained from the municipalities within Collin County. These existing plans provided the basis for developing population and employment projections. Thoroughfare Plans and the Regional Mobility Plan were utilized to develop the initial transportation model networks that were evaluated during the travel demand forecasting process. The existing roadway network is shown in **Figure 9**.

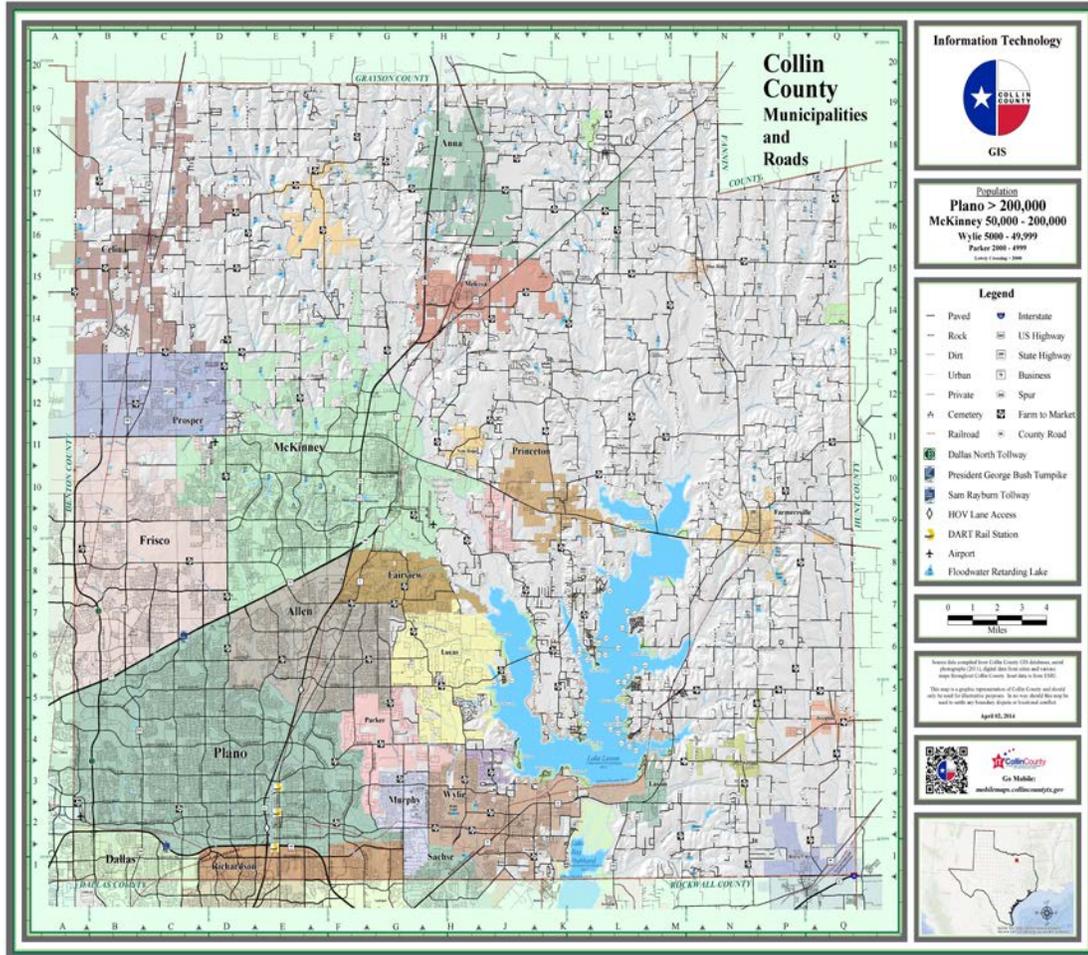


Figure 9: Collin County Existing Roadways

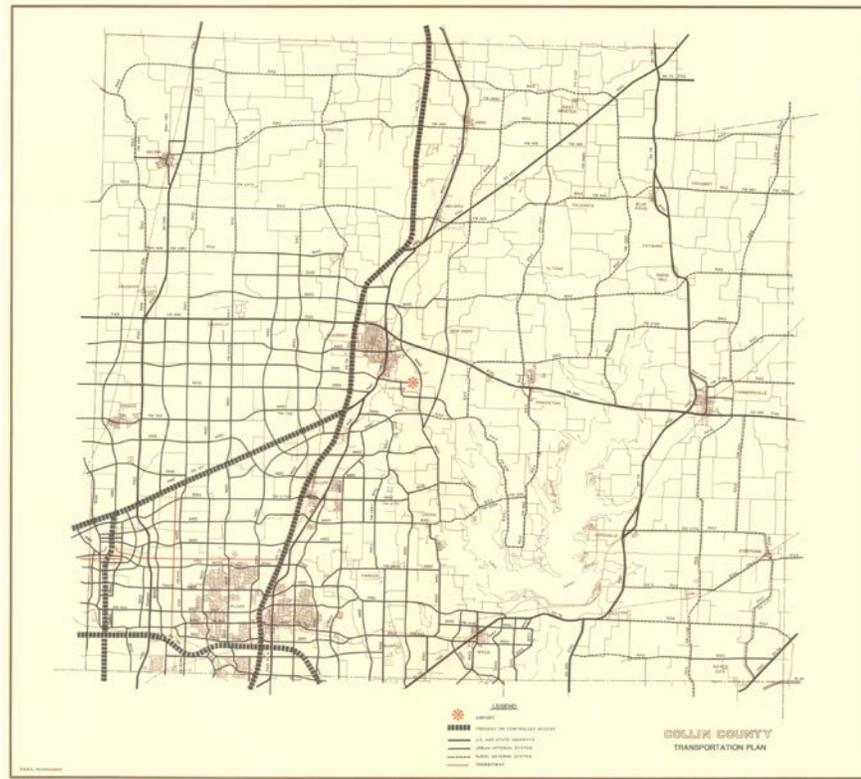


Figure 10: 1982 Collin County Thoroughfare Plan

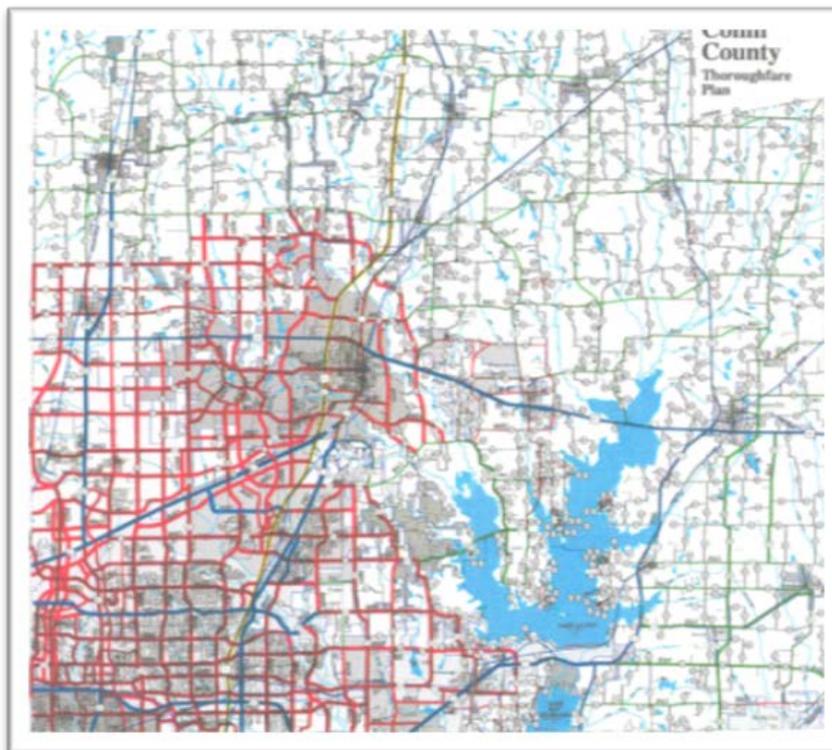


Figure 11: 1998 Collin County Thoroughfare Plan

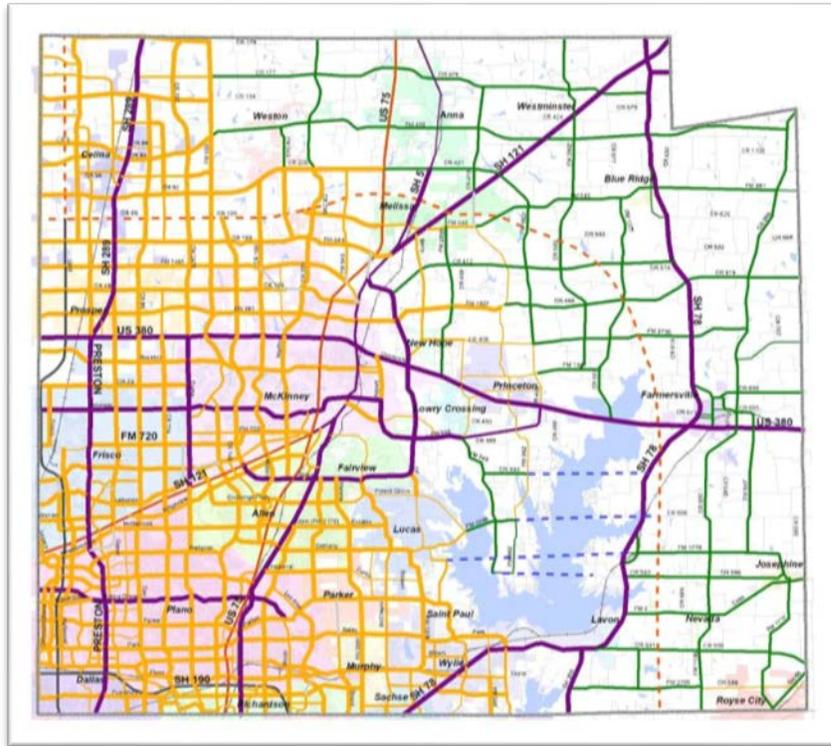


Figure 12 A: 2002 Collin County Thoroughfare Plan

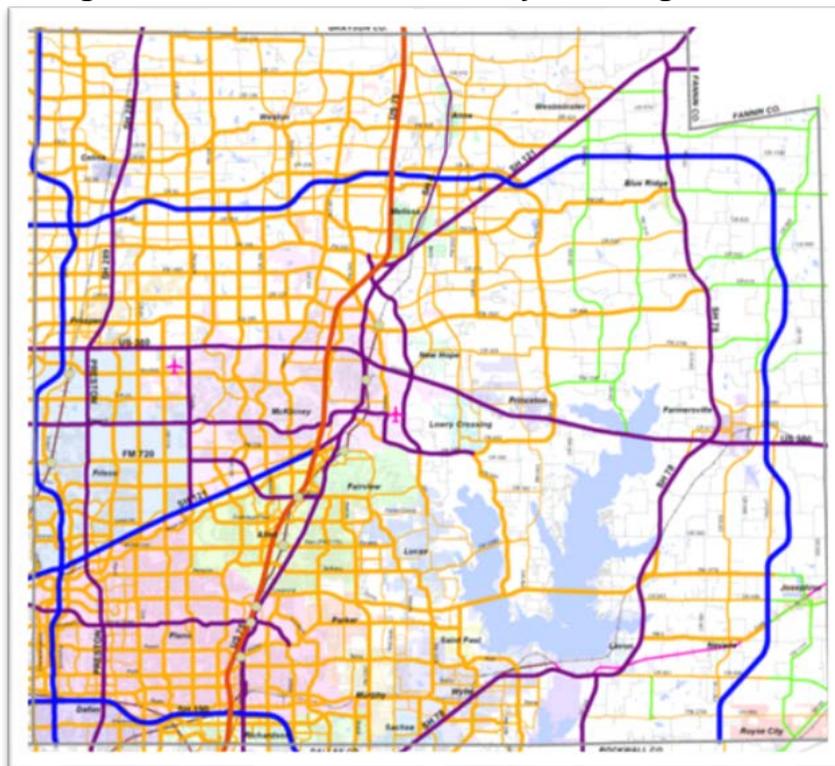


Figure 12 B: 2007 Collin County Thoroughfare Plan

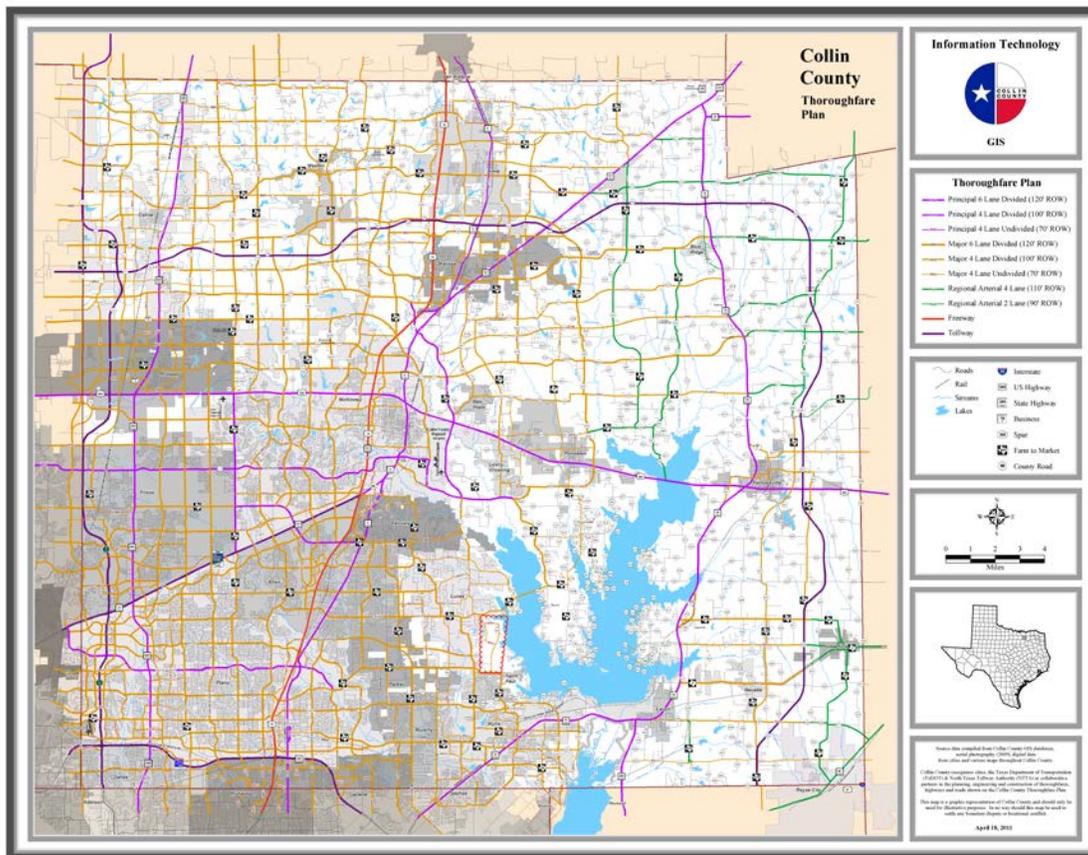


Figure 13: 2011 Collin County Thoroughfare and Transit Plan

4.1.2. Environmental Constraints

Environmental and physical constraints to thoroughfare development were recognized in preparation of the Thoroughfare Plan. The identified environmental constraints are shown in **Figure 14**. The existing physical constraints include:

1. Topographic constraints such as steep slopes or abrupt changes in elevation;
2. Railroad crossings requiring grade separations or at grade crossing protection, and thoroughfare improvements paralleling a railroad corridor involving right of way constraints;
3. Existing development interfering thoroughfare improvement in areas where right of way was insufficient when the property was originally platted, or where buildings were constructed with minimal setbacks from the right of way;



4. Public parks and historic sites either interfere with conversion of parkland to other uses, or impact cultural resources;
5. Major water bodies such as lakes, reservoirs, rivers, bayous, and creeks and their associated floodplain areas affecting thoroughfare alignment increasing the capital cost of thoroughfare improvements for necessary bridges, causeways or fill sections;
6. Sensitive environmental areas such as wetlands, prime farmland, or critical habitat areas.

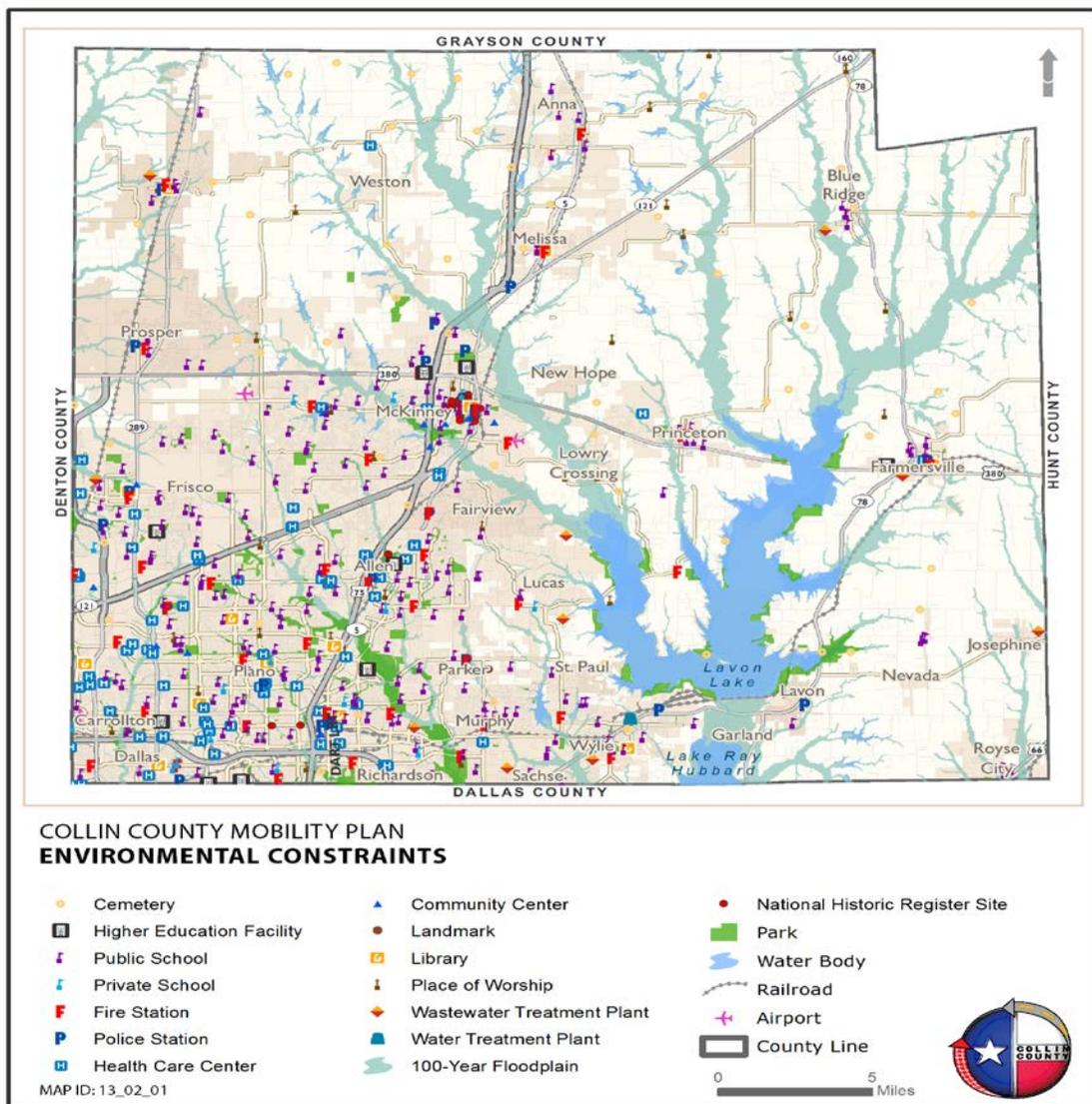


Figure 14: Environmental and Physical Constraints



4.1.3. City Land Use and Transportation Plans

Many Texas jurisdictions, including cities and incorporated towns within Collin County, have adopted plans for future land use and improvements to the transportation network within their corporate limits and extraterritorial jurisdiction (ETJ). Each local jurisdiction within the County with a population of 5,000 or more, as well as some of the smaller jurisdictions, had developed a Comprehensive Plan to guide further land use development activity and a Thoroughfare Plan to serve the travel needs of area residents. Of the 30 jurisdictions in Collin County, at least 20 have adopted plans. The consulting team assembled the existing Comprehensive Plans, Land Use Plans, and Transportation Plans for the various local jurisdictions. **Table 3** lists all cities that made their plans available to the consultant team for review and consideration. For the cities that did not either have the data available, or did not provide the data, reasonable planning assumptions were developed and incorporated into the database. The future land use plan assumes ultimate build out as identified in the Cities comprehensive plans, as shown in **Figure 15**.

Typically, the thoroughfare system map indicates whether the existing rights-of-way for thoroughfares have sufficient existing width or need to be widened, and shows the planned extensions of thoroughfares on new alignments where right of way needs to be acquired in the future. Thoroughfare Plans also include typical roadway cross sections, indicating the desired number of lanes, right of way and pavement widths, and other dimensional criteria for any city streets.

The principles of regional connectivity and coordinated planning are especially significant to the mobility planning process. Therefore, this County Mobility Plan 2014 Update has taken the thoroughfare plans adopted by municipalities into consideration. The adopted land use and transportation plans for the municipalities provided the basis for developing population and employment projections, as well as coordinating planned thoroughfares.



Table 3: Cities and Documents provided for Review

Municipality	Documents
Allen	Comprehensive Plan, Traffic Volumes
Anna	Land Use Plan
Carrollton	Comprehensive Plan
Celina	Comprehensive Plan
Dallas	Thoroughfare Plan
Fairview	Comprehensive Plan
Farmersville	Thoroughfare Plan, Future Land Use Plan
Frisco	Comprehensive Plan
Garland	Comprehensive Plan
Lucas	Comprehensive Plan
McKinney	Comprehensive Plan
Melissa	Transportation Plan
Murphy	Future Land Use
Nevada	Comprehensive Plan
Parker	Comprehensive Plan
Plano	Comprehensive Plan
Prosper	Master Thoroughfare Plan, Future Land Use Plan
Richardson	Comprehensive Plan
Sachse	Comprehensive Plan
Weston	Thoroughfare Plan
Wylie	Thoroughfare Plan

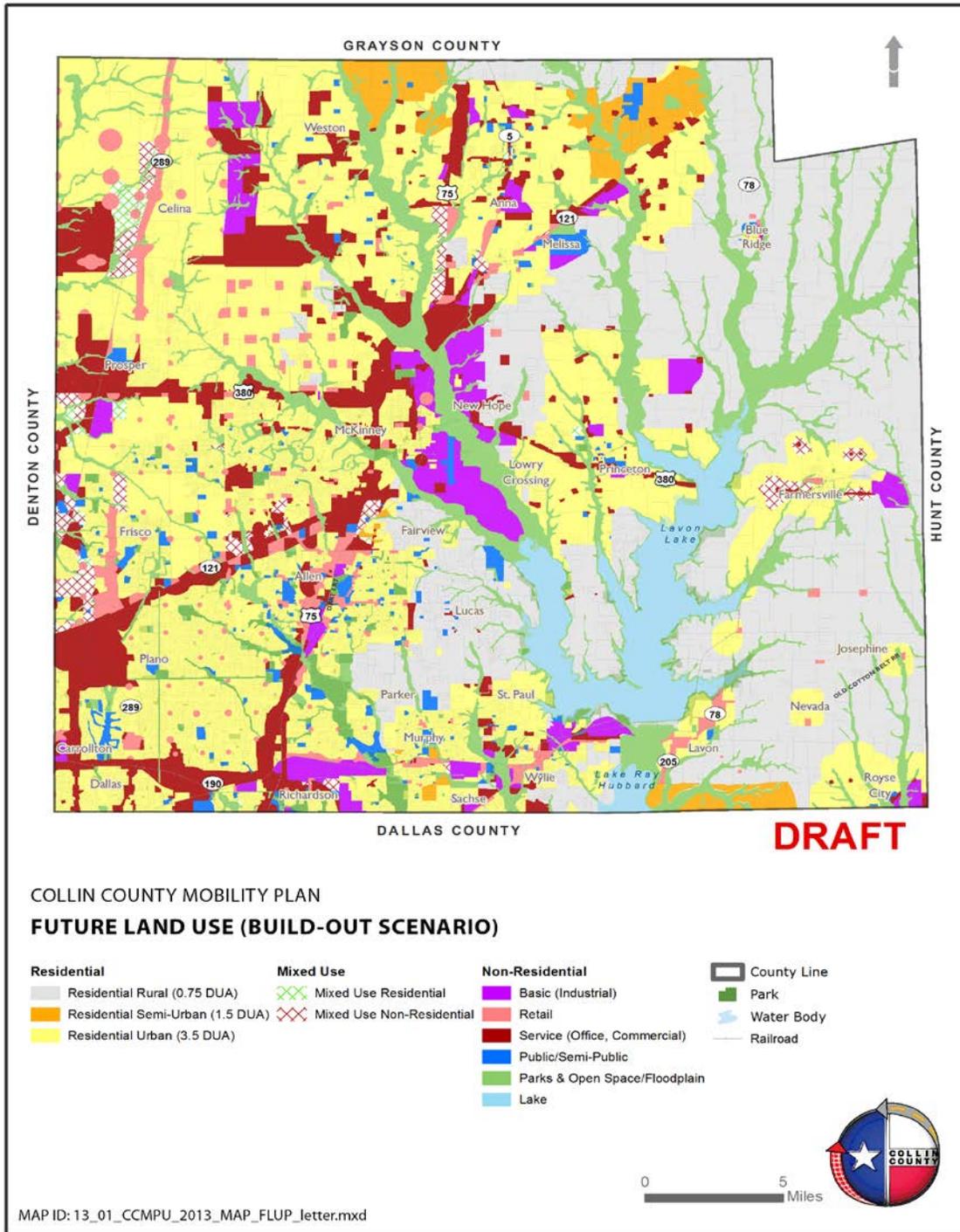


Figure 15: Collin County Future Land Use Plan Map (Build Out)



4.1.4. Demographic and Land Use Forecasts

For the purpose of the Mobility Plan Update, population and employment projections were developed for the interim year (2020), the horizon year (2035), and the “build-out” scenario. The “build-out” projections reflect the population and employment that will occur if the various local jurisdictions “build-out” according to their existing adopted plans.

A Transportation Survey Zone (TSZ) was used as the smallest geographical unit. A TSZ is a geographical area based on the geography, population size, land use, and transportation facilities. The TSZs are typically bounded by roadways or other natural features, such as lakes or streams. The NCTCOG has divided the entire nine-county, DFW Metroplex area into 6,399 TSZs. Collin County consists of 453 TSZs, each of which was assigned to a city area or to the county. Boundaries of TSZs rarely follow city limits, so it was necessary to assign TSZs to a city area that comprises the dominant portion of each TSZ.

These combinations of TSZs are referred to as "City Areas" for purposes of this analysis. City Areas do not equate to the incorporated area of a municipality. A total of 438 TSZs were assigned to the City Areas and the remaining 15 TSZs were assigned to the County. The TSZs were assigned to the City Areas if:

1. A TSZ boundary coincided with, or exceeded beyond, a city boundary;
2. A TSZ boundary spanned more than one city, the TSZ was assigned to the City Area that comprised the greater portion of the TSZ;
3. A TSZ boundary more or less, if not exactly, followed a city boundary. Consequently, demographic values for some of the City Areas are either higher or lower than those for the city actual because of this effect.

Figure 16 shows the geographic distribution of each of the 453 TSZs and the City Areas based on the TSZs in the County.

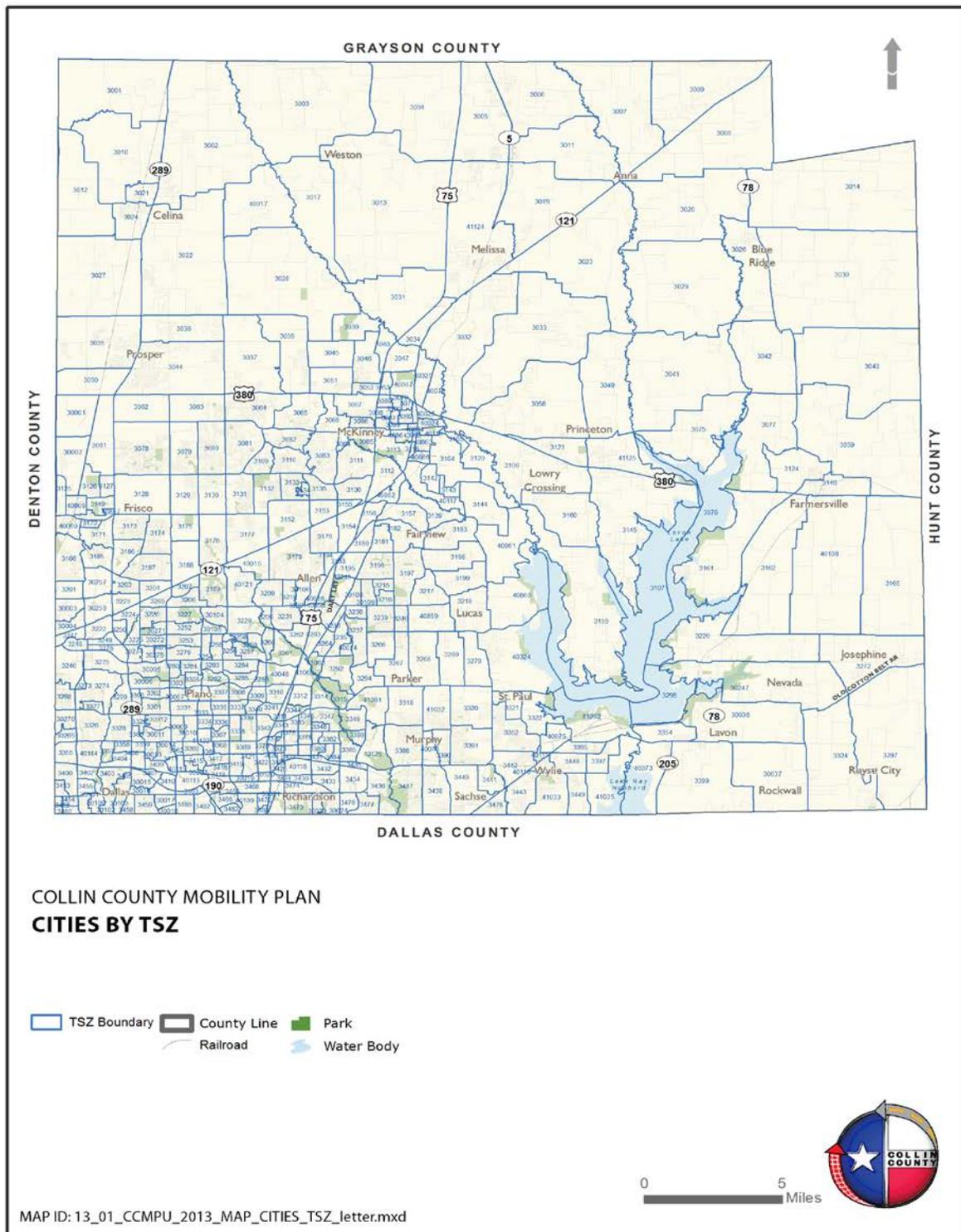


Figure 16: Collin County Transportation Serial Zones and City Areas



As part of the Mobility Plan Update, an accurate and updated estimate (control total) for Collin County's 2007 population and employment was required. Therefore, NCTCOG

2012 population and employment data was used as a starting or reference point. The NCTCOG 2012 data was reviewed for accuracy, and consequently updated to form the 2007 estimates for the Mobility Plan Update. Specifically, using the NCTCOG aeriels and visual site inspections (for selected properties), each TSZ and associated data was either confirmed or revised. Revisions to NCTCOG 2012 data were made on an as-needed basis using a detailed, parcel-by-parcel analysis in each TSZ. Additionally, Texas Work Force Commission data and U.S. Census (2010) data were used in establishing control totals.

Once the NCTCOG 2012 data were either confirmed or revised, comprehensive plans, future land use plans (FLUPs), and general planning assumptions were applied to vacant land to determine the build-out population and employment for each of the 453 TSZs. If density information was provided in a municipal comprehensive plan, then that density was used instead of the standards listed above. The following factors were used in calculating demographics:

- Density for Population
- Urban – 3.50 Dwelling Units per Acre
- Semi-Urban – 1.50 Dwelling Units per Acre
- Rural – 0.75 Dwelling Units per Acre
- Density for Employment
- Retail – 0.25 F.A.R. – 350 S.F. per employee
- Service – 0.25 F.A.R. – 450 S.F. per Employee
- Basic – 0.10 F.A.R. – 1,000 S.F. per Employee
- Population (General)
 - A 10% reduction was applied to vacant residential land of 500 acres or greater to accommodate roads and other public and semi-public land uses.
- Population (Households)
 - A 93.4% occupancy rate was used to determine the amount of future households. However, if a City cited a different number, then the city's number was used. The 93.4% occupancy rate was reported in the 2005 U.S. Census for Collin County.
- Population (Persons)
 - The number of persons in each TSZ was calculated by using each TSZs person per household and multiplying by the number of households.



In order to project 2020 and 2035 population and employment, growth rates were determined for each TSZ based on the municipal comprehensive plans and observed growth patterns in each TSZ or city. The complete listings of the 2020, 2035, and the ultimate build-out population and employment figures for each of the TSZ zones, are included in Error! Reference source not found..

In general, Collin County is developing or growing from the southwest (e.g., Dallas, Plano, and Richardson) to the northeast/east portion of the County (e.g., Anna, Melissa, Blue Ridge, Farmersville, and Josephine). Furthermore, cities in the southwestern portion of the County will reach build-out earlier than cities in the northeastern/eastern portion. As a whole, the County is projected to reach its “build-out” or ultimate population of approximately 2,088,000 people in 2054. This would be 2.6 times the base year 2012 population of approximately 808,830. The County will reach its “build-out” or ultimate employment in the year 2055 with approximately 1,168,000 jobs within the County. This would be 3.6 times the base year 2012 employment of 325,177.

The resulting population and employment projections are shown graphically in **Figure 17**. The population forecasts for 2020 and 2035 are illustrated by the population density maps showing in **Figures 18, 19, 20A, and 20B**. Each dot represents 250 residents.

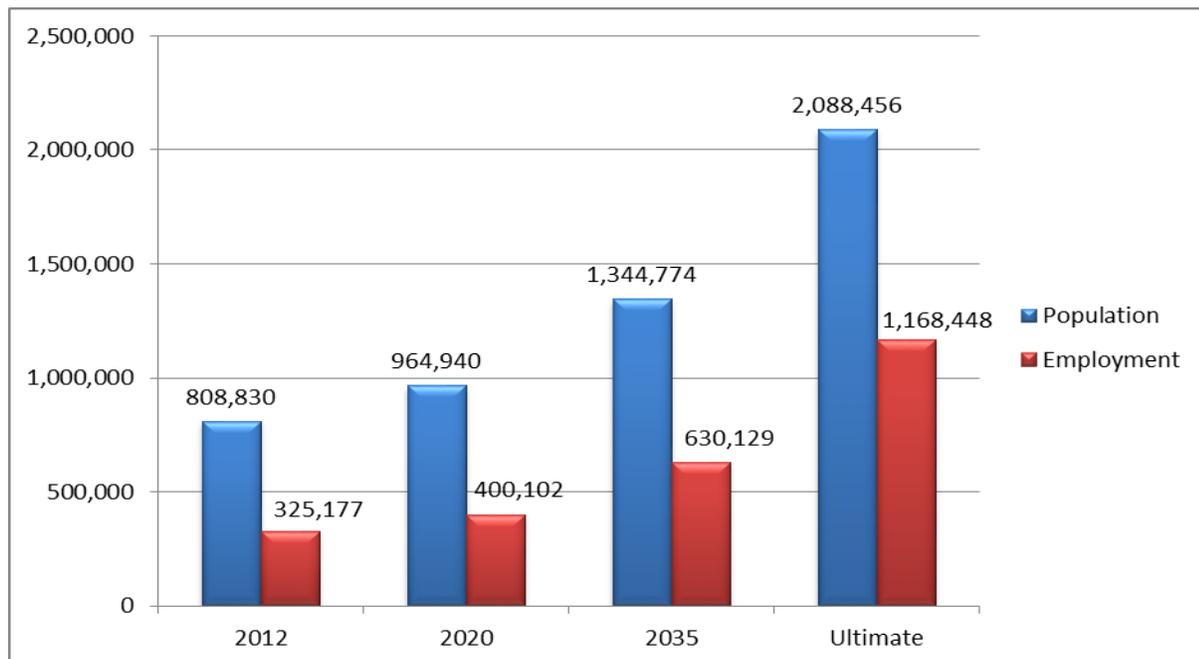




Figure 17: Collin County Population and Employment Forecasts

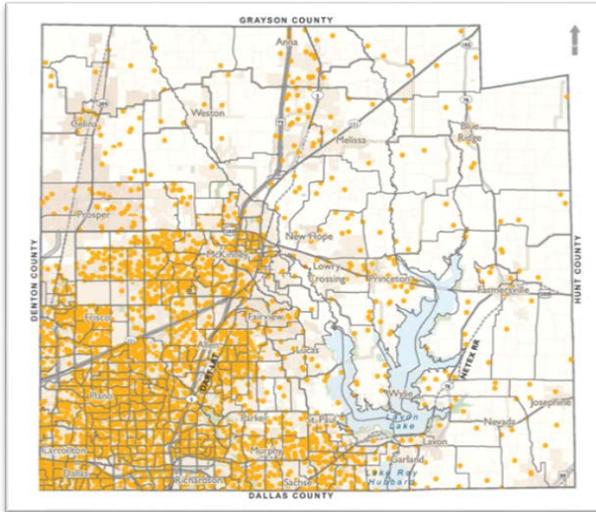


Figure 18: Collin County Population Estimate – 2012
(1 dot = 250 residents)

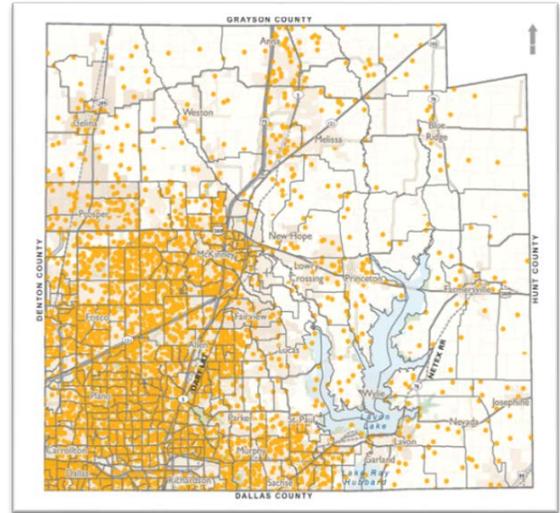


Figure 19: Collin County Population Estimate – 2020
(1 dot = 250 residents)

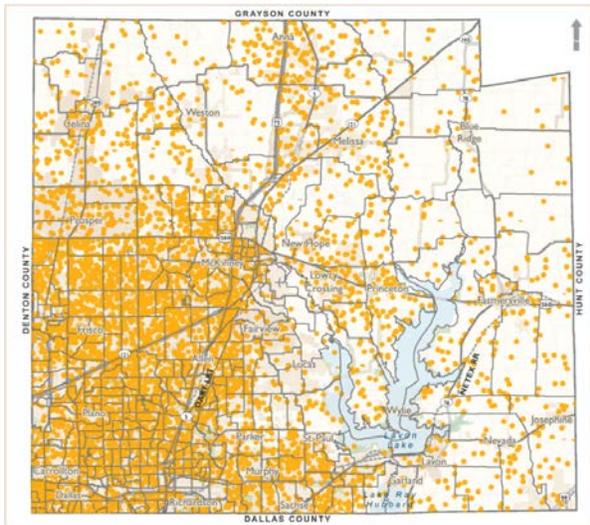


Figure 20 A: Collin County Population Estimate – 2035
(1 dot = 250 residents)

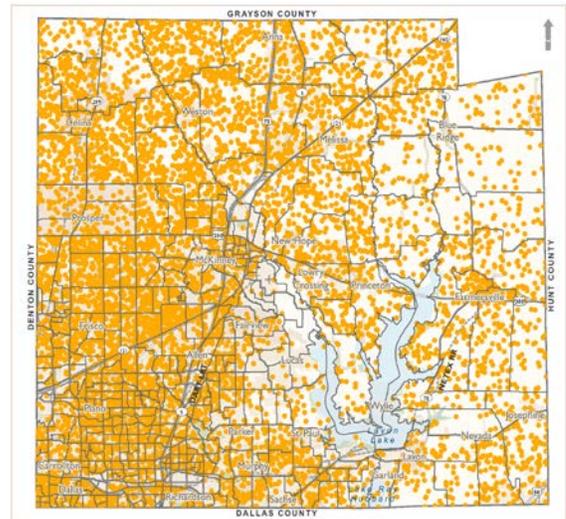


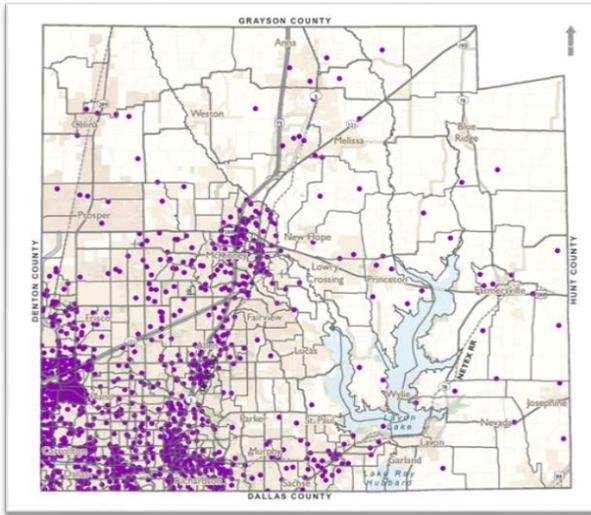
Figure 20 B: Collin County Population Build-Out
(1 dot = 250 residents)



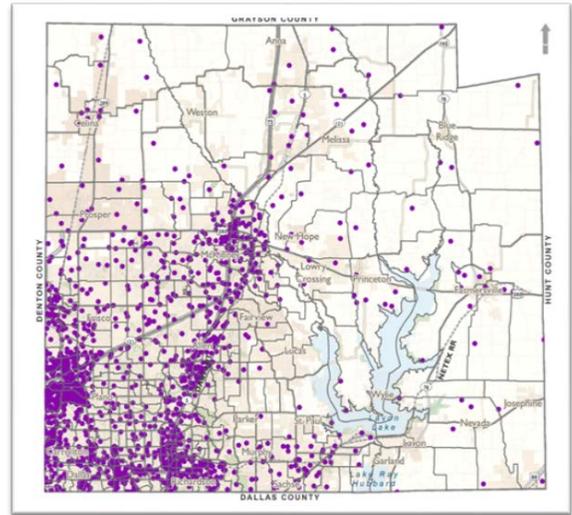
In some areas, particularly in the southwestern portion of the County, build-out will occur prior to 2025. In other areas, such as in the north-east, build-out will occur after 2025. For example, the City of Plano is projected to build-out within the next ten years. However, the Cities of Allen and Frisco are projected to build-out within the next 15 years, while the City of McKinney will not build-out for 25 years. The greatest concentration of population and employment will be located on the west side of the County. This area stretches from Plano northward to Celina and also includes the cities of Allen, Frisco, McKinney, and Wylie. This area reflects the County's urbanized area, with residential development consisting of a variety of housing types and densities and non-residential development ranging from local retail to international manufacturing.

The employment forecasts for 2012, 2020, and 2035 are shown in **Figures 21, 22, 23A and 23B**. Each dot represents 250 employees.

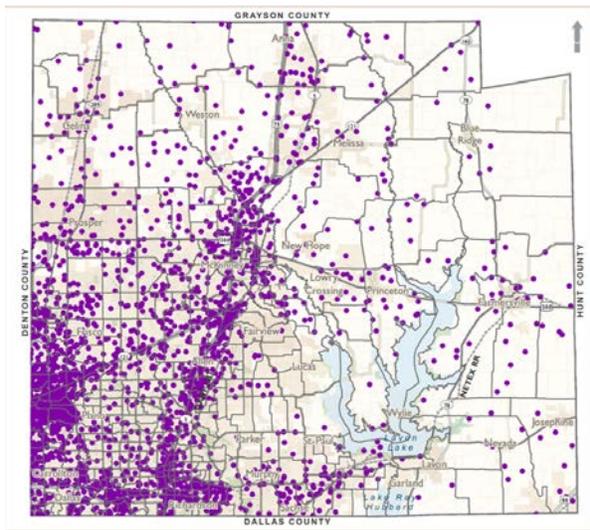
The population and employment forecasts for city groups of TSZs are listed in **Tables 4 and 5**. The City Areas listed in these tables do not coincide with the incorporated areas of the respective municipalities. The City Areas are groupings of TSZs that roughly associate with the location of the cities. Consequently the population and employment projections for City Areas are not the forecasts for the cities referenced.



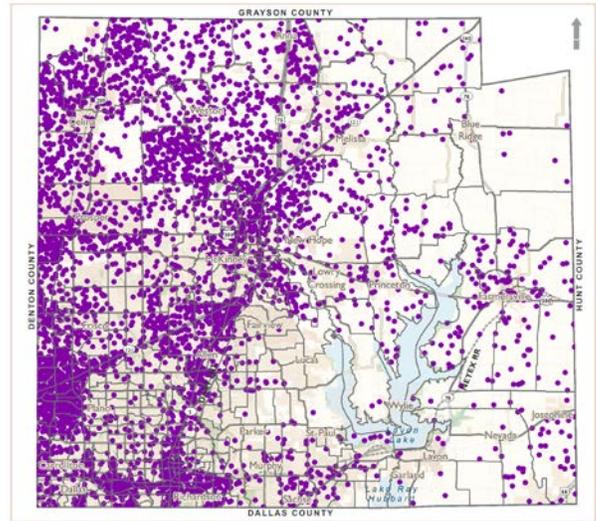
**Figure 21: Collin County
Employment Estimate – 2012**
(1 dot = 250 employees)



**Figure 22: Collin County
Employment Estimate – 2020**
(1 dot = 250 employees)



**Figure 23 A: Collin County
Employment Estimate – 2035**
(1 dot = 250 employees)



**Figure 23 B: Collin County
Employment (Build-Out)**
(1 dot = 250 employees)



Table 4: Collin County Population Projections for City Area Groupings of TSZs

Population					
City	2012	2020	2035	CAGR	Ultimate
Allen	78,950	87,506	94,781	0.80%	94,781
Anna	9,228	19,928	48,505	7.48%	146,017
Blue Ridge	4,144	4,849	14,372	5.56%	62,581
Carrollton	<i>Classified Under Plano</i>				
Celina	7,417	15,002	50,954	8.74%	189,199
Dallas	70,085	71,320	74,169	0.25%	74,169
Fairview	8,672	12,010	20,025	3.71%	20,025
Farmersville	6,625	8,660	29,808	6.76%	106,002
Frisco	70,723	105,501	183,592	4.23%	183,592
Garland	<i>Classified Under Richardson</i>				
Josephine	754	1,584	3,169	6.44%	6,338
Lavon	2,224	5,179	10,357	6.92%	20,715
Lowry Crossing	2,984	4,663	13,955	6.94%	23,146
Lucas	6,130	6,494	10,219	2.25%	13,406
McKinney	133,055	180,175	244,530	2.68%	350,279
Melissa	6,090	8,752	26,009	6.52%	71,793
Murphy	14,952	17,014	18,072	0.83%	18,072
Nevada	2,946	3,625	6,567	3.55%	11,770
New Hope	<i>Classified Under McKinney</i>				
Parker	6,604	7,316	12,417	2.78%	12,417
Plano	271,970	278,029	284,656	0.20%	284,656
Princeton	12,511	15,189	40,164	5.20%	78,304
Prosper	10,515	20,004	32,031	4.96%	35,058
Richardson	33,765	35,700	41,761	0.93%	45,151
Rockwall	656	1,133	2,834	6.57%	5,667
Royse City	2,060	2,735	10,226	7.22%	40,906
Sachse	4,477	5,110	6,227	1.44%	7,122
Saint Paul	1,856	1,965	2,400	1.12%	2,666
Van Alstyne	<i>Classified Under Anna</i>				
Weston	1,285	3,370	9,053	8.86%	127,026
Wylie	38,153	42,126	53,919	1.52%	57,599
Totals	808,830	964,940	1,344,774	2.24%	2,088,456
Compound Annual Growth Rates	Years 2012-2020			2.230%	
	Years 2020-2035			2.237%	

Note: City Areas are based on TSZ boundaries as described in Section 4.1.2

Source: Projections by Freese and Nichols updated from the Collin County Mobility Plan 2002 Update



Table 5: Collin County Employment Projections for City Area Groupings of TSZs

Employment					
City	2012	2020	2035	CAGR	Ultimate
Allen	21,076	27,320	47,171	3.56%	62,142
Anna	1,731	3,275	12,914	9.13%	48,899
Blue Ridge	1,274	1,444	3,263	4.17%	9,385
Carrollton	<i>Classified Under Plano</i>				
Celina	2,159	4,221	12,900	8.08%	136,411
Dallas	16,290	18,073	19,216	0.72%	19,216
Fairview	1,574	3,003	13,820	9.91%	13,820
Farmersville	2,772	3,092	9,225	5.37%	34,250
Frisco	33,488	51,576	92,322	4.51%	132,284
Garland	<i>Classified Under Richardson</i>				
Josephine	149	209	350	3.78%	450
Lavon	353	552	995	4.61%	2,270
Lowry Crossing	346	624	2,049	8.04%	4,031
Lucas	604	842	1,731	4.68%	2,605
McKinney	43,105	58,905	98,748	3.67%	246,487
Melissa	1,438	2,570	14,639	10.62%	28,284
Murphy	1,623	2,249	3,231	3.04%	3,231
Nevada	609	765	1,242	3.15%	1,888
New Hope	<i>Classified Under McKinney</i>				
Parker	499	513	561	0.51%	1,432
Plano	160,916	176,819	212,429	1.21%	230,533
Princeton	2,924	3,554	9,378	5.20%	19,570
Prosper	1,262	2,948	10,222	9.52%	34,996
Richardson	20,953	24,698	33,770	2.10%	39,362
Rockwall	89	89	89	0.00%	89
Royse City	416	472	2,672	8.42%	10,316
Sachse	1,395	2,022	4,732	5.45%	5,547
Saint Paul	113	113	113	0.00%	113
Van Alstyne	<i>Classified Under Anna</i>				
Weston	287	435	6,794	14.75%	64,366
Wylie	7,732	9,718	15,554	3.09%	16,468
Totals	325,177	400,102	630,129	2.92%	1,168,448
Compound Annual Growth Rates	Years 2012-2020			2.626%	
	Years 2020-2035			3.074%	

Note: City Areas are based on TSZ boundaries as described in Section 4.1.2

Source: Projections by Freese and Nichols updated from the Collin County Mobility Plan 2002 Update



4.2. Forecasting Process

4.2.1. The Travel Demand Forecasting Process

The Travel Demand Forecasting Process for the Collin County Mobility Plan Update was a collaborative effort between the project team and the North Central Texas Council of Governments. The forecasting process used the Dallas-Fort Worth Regional Travel Model for the Expanded Area (DFX) customized to address the demographic and transportation NCTCOG Model Coordination and Analysis

Since the early 1960's, travel demand forecasting models have been used as a tool in the transportation decision making process. These models simulate existing and future traffic on the transportation network and measure the impact of possible changes or additions. The projected level of service (LOS) for the Collin County thoroughfare networks in 2020 and 2035 are shown in **Figure 24** and **Figure 25** on following pages. There are four basic steps in the travel demand forecasting process. These are:

1. Trip Generation
2. Trip Distribution
3. Mode Choice
4. Traffic Assignment

In general, person(s) trips are generated based on established relationships for trip-making activity; distributed between zones based on their relative attractiveness; converted to vehicle trips by adjusting for auto occupancy and transit ridership; and then assigned to the roadway network according to the shortest time path between each origin and destination, while taking into consideration the constraining effect of individual roadway capacities.

As a part of the modeling process for Collin County, traffic assignments were prepared for the interim year (2020), and the horizon year (2035).

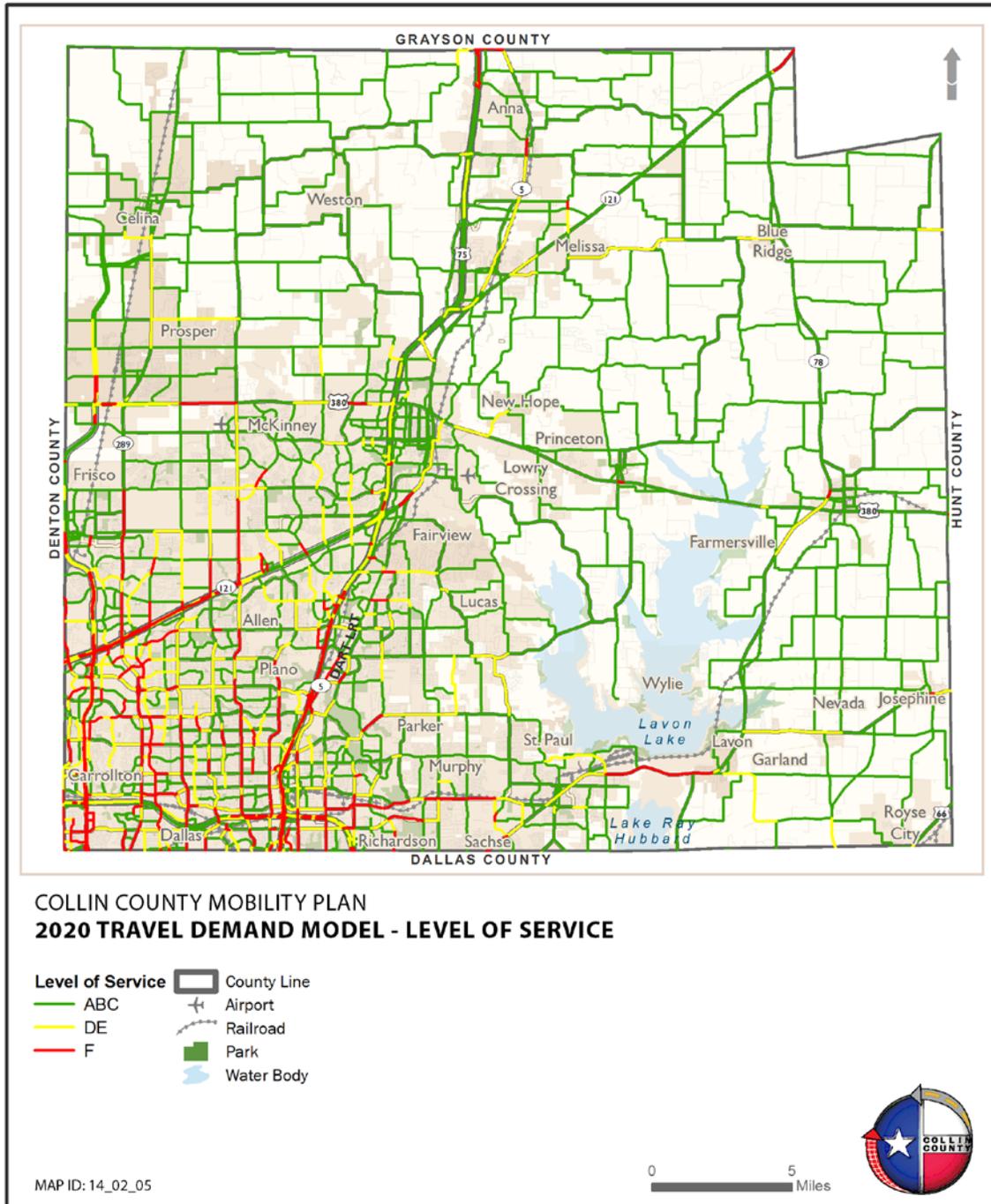


Figure 24A: 2020 Level of Service (LOS)

Note:

Red segments identify roadways with LOS F
 Yellow segments identify roadways with LOS D or E
 Green segments identify roadways with LOS A, B, or C

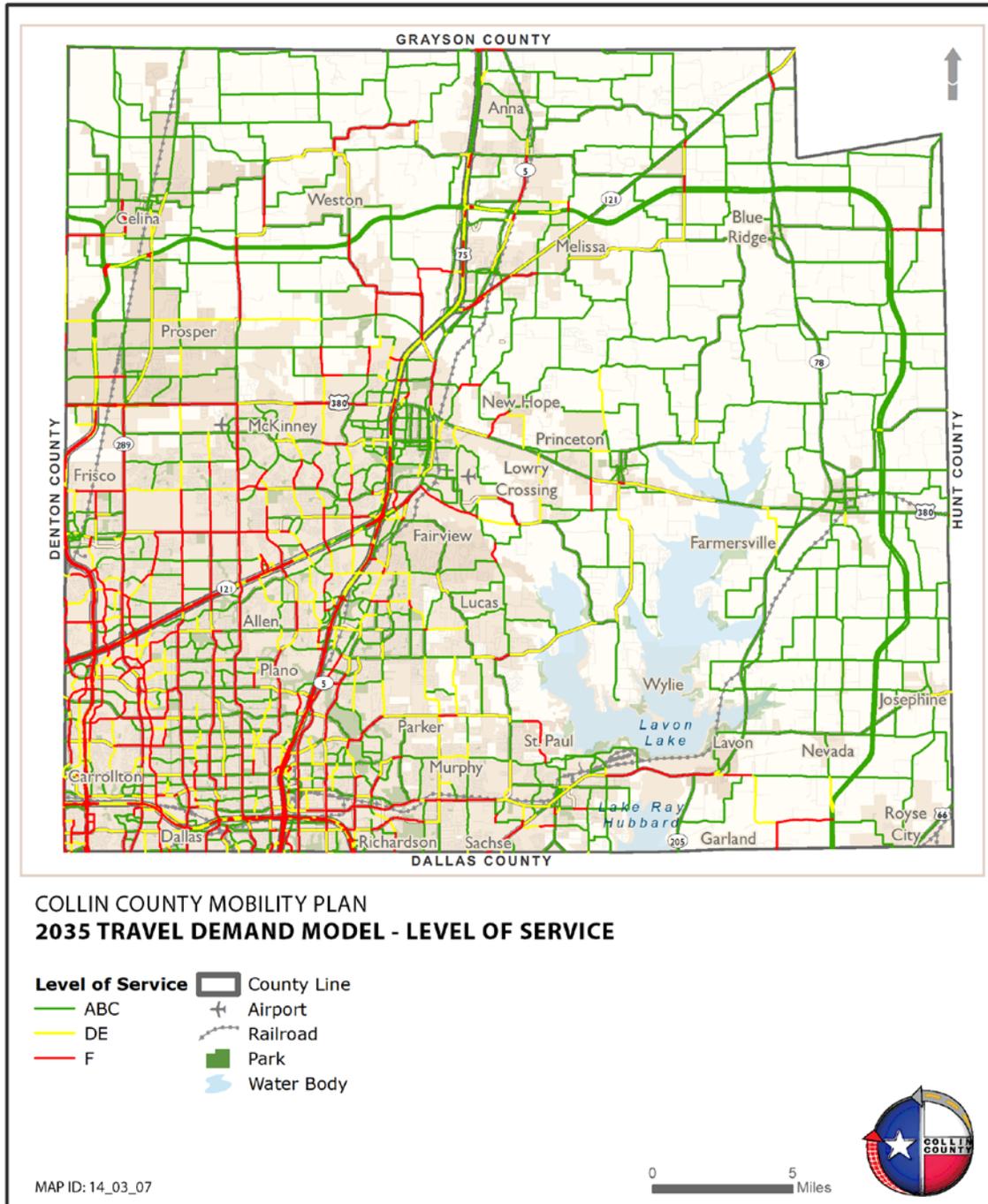


Figure 24B: 2035 Level of Service LOS

Note:

Red segments identify roadways with LOS F
Yellow segments identify roadways with LOS D or E
Green segments identify roadways with LOS A, B, or C



4.2.2. Transportation Networks

The Dallas-Fort Worth Regional Travel Demand Model for the Expanded Area (DFX), developed by the North Central Texas Council of Governments (NCTCOG) was used for the forecasting process. The transportation networks within the model were verified and updated to include existing and funded projects. Traffic assignments were then performed for 2020 and 2035 using the updated transportation networks. The first of these was based on:

1. The ultimate projections for population and employment within the County, as determined from the local Comprehensive Plans;
2. The currently projected ultimate population and employment for the Dallas-Fort Worth region, as estimated by the NCTCOG; and
3. The roadway and transit improvements recommended in the NCTCOG 2035 Regional Mobility Plan.

Following review of the resulting traffic volume projections, additional refinements were made to the model network in order to identify a transportation system that would sufficiently accommodate projected travel demand over the next 20-25 years. The resulting networks for 2020 and 2035 are shown in **Figure 25A** and **Figure 25B**.

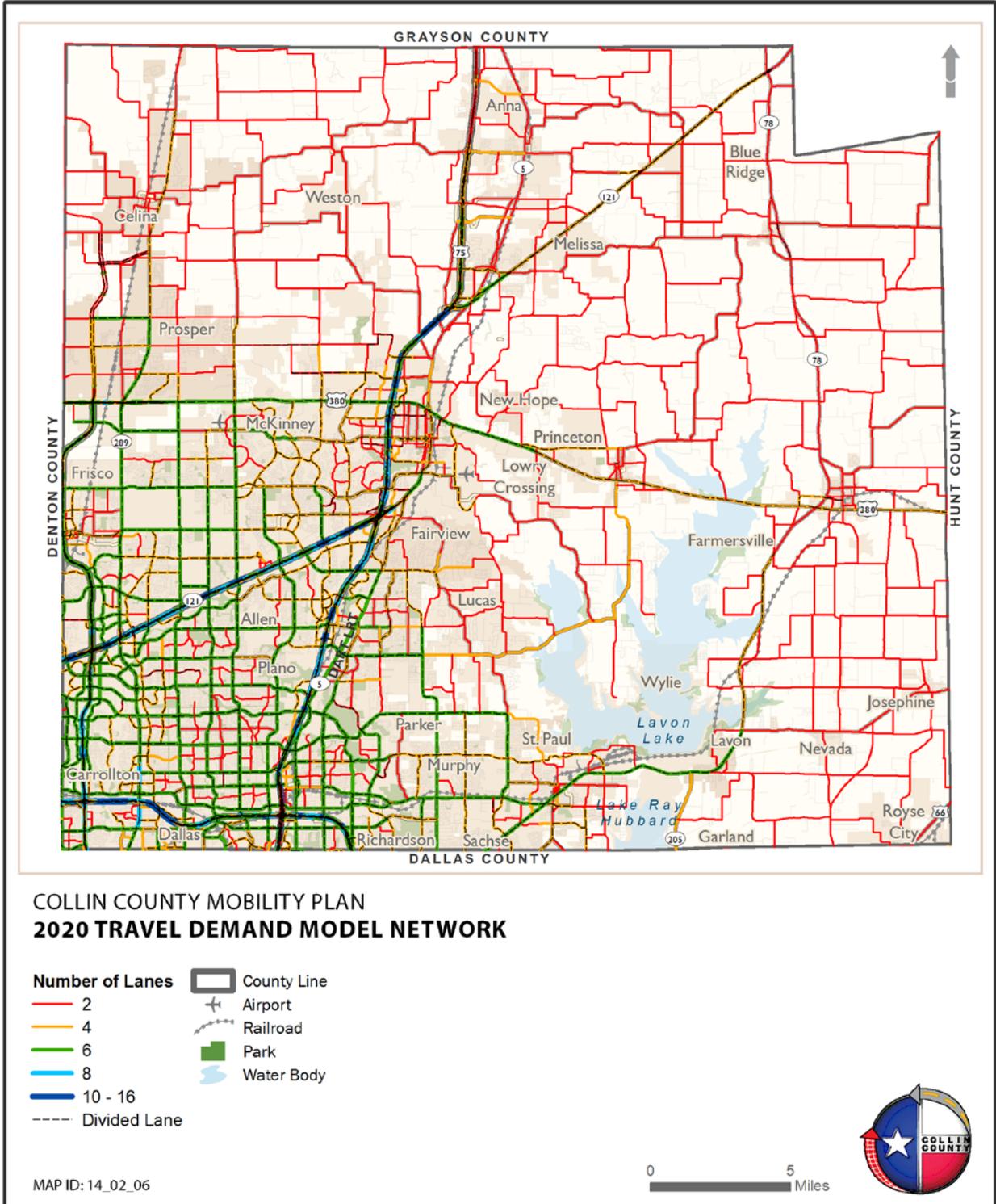
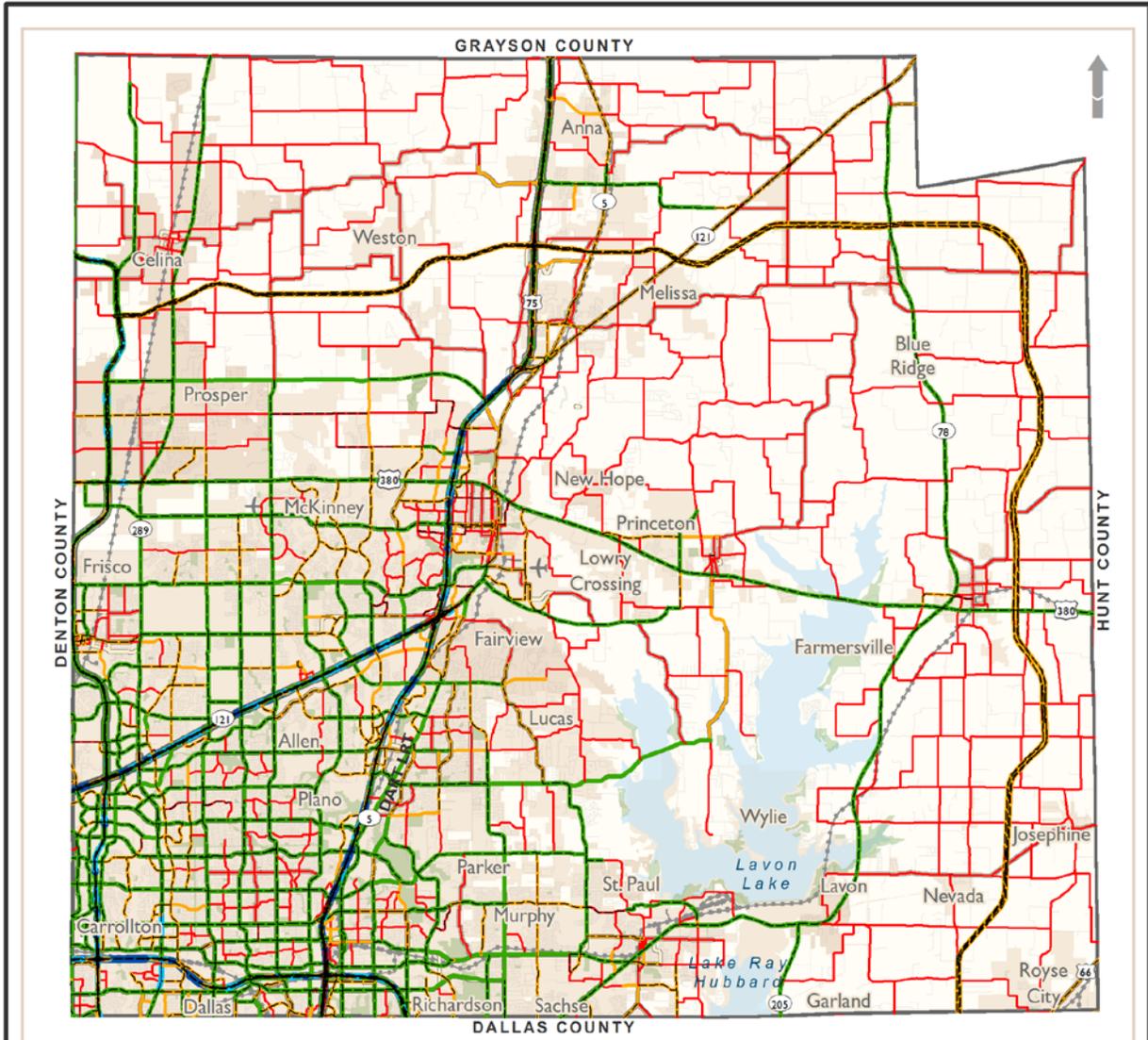


Figure 25A: 2020 Network



**COLLIN COUNTY MOBILITY PLAN
2035 TRAVEL DEMAND MODEL NETWORK**

- | | |
|------------------------|-------------|
| Number of Lanes | County Line |
| 2 | Airport |
| 4 | Railroad |
| 6 | Park |
| 8 | Water Body |
| 10 - 16 | |
| Divided Lane | |

MAP ID: 14_03_06



Figure 25B: 2035 Network



4.2.3. Regional Travel Model

Travel models use input data consisting of demographic and employment variables combined with a detailed description of the transportation system to determine how many trips will be generated, how these trips will be distributed across the study area, what mode of travel (auto, carpool, transit, etc.) travelers will use, and what routes trip makers will select (based on travel delay and other constraints) to reach their destination. The Dallas-Fort Worth Regional Travel Model for the Expanded Area (DFXWRTM) is a four-step trip-based travel demand model that covers approximately 105,000 square miles in North Central Texas. The modeling area includes the entire counties of Collin, Dallas, Denton, Ellis, Hill, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, and Tarrant, and Wise the western portion of Kaufman County, the northern portion of Ellis and Johnson Counties, and the eastern portion of Parker County. To focus the travel model on Collin County and to customize the model data and transportation system networks to address the assumptions being applied for the Collin County Mobility Plan Update, revisions were made to the model input data and transportation system networks. These revisions included an update of the demographic and employment forecasts of anticipated growth in Collin County for the milestone years 2020 and 2035 as well as for full build out of the County.

The data representing daily traffic volumes for 2012, and 2035 are shown in **Figure 26 A**, and **Figure 26 B**.

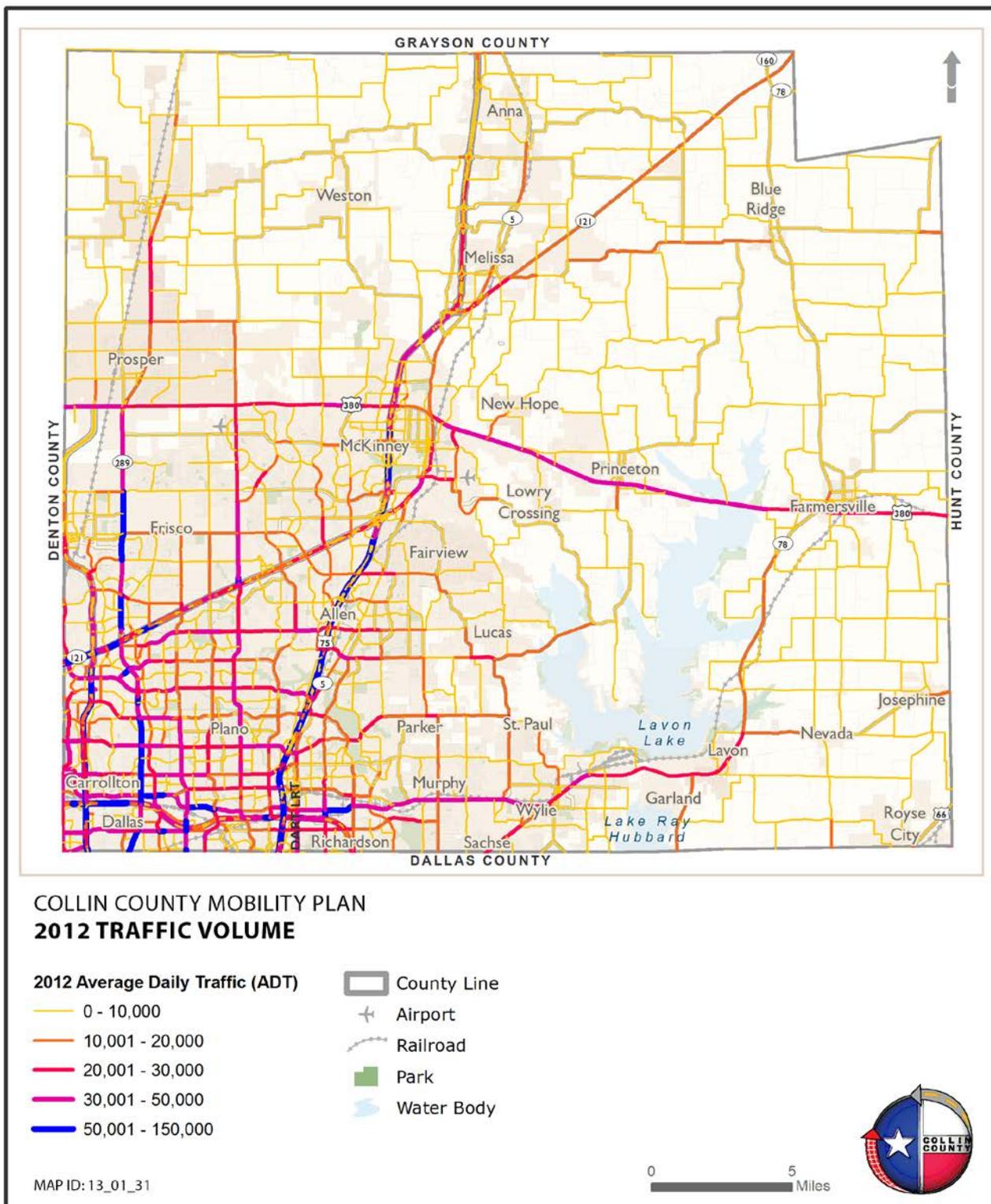


Figure 26A: 2012 Daily Traffic Volume

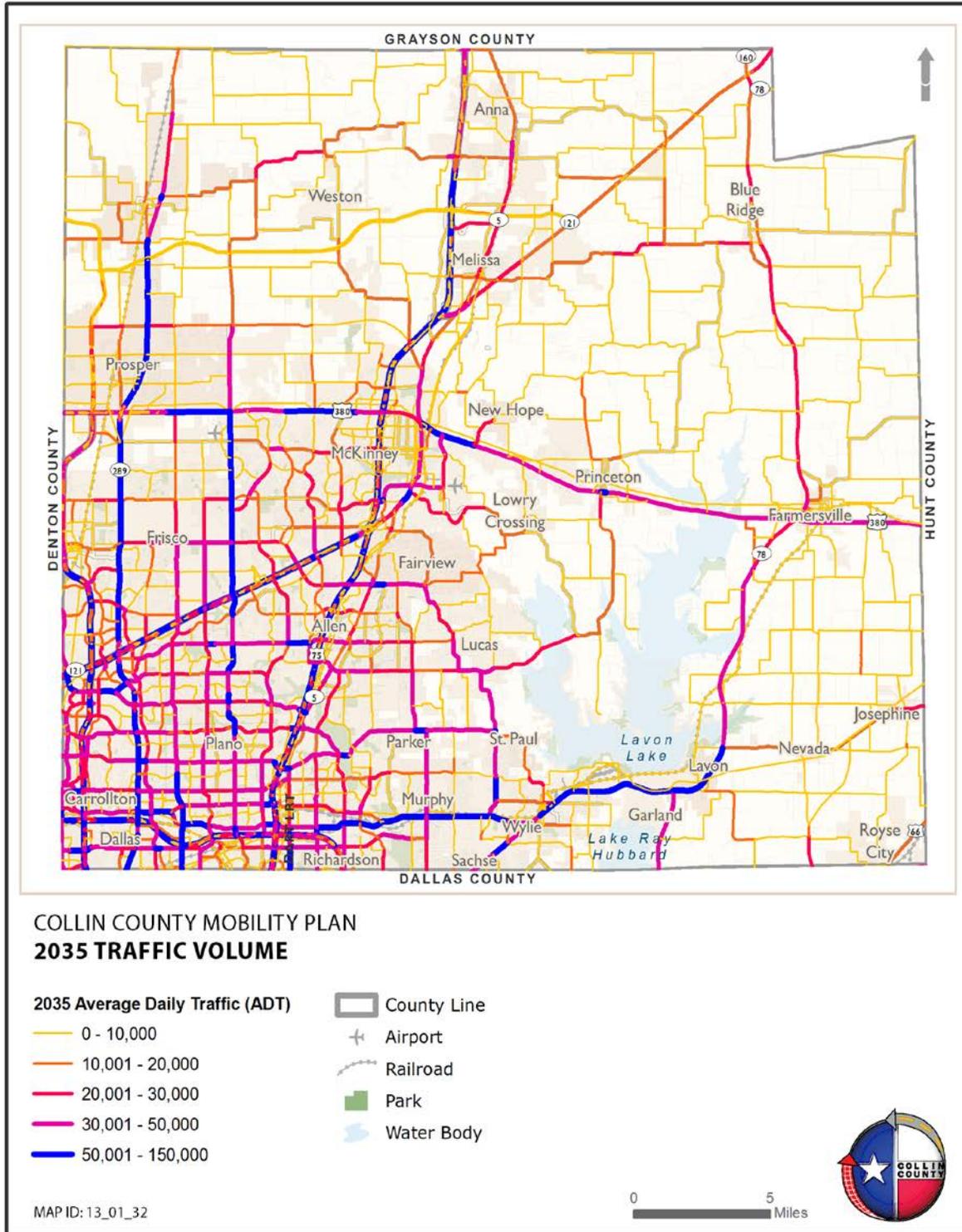


Figure 26B: 2035 Daily Traffic Volume



The NCTCOG highway networks were also modified to reflect committed and proposed roadway projects that were to be included in the Collin County Mobility Plan Update, but were not included in the standard NCTCOG highway networks. These modified demographic inputs and highway network refinements were developed by the project team and provided to the NCTCOG Travel Model Development Group who coded the highway networks and performed the initial travel model runs using the adjusted demographics and network definition. The NCTCOG Travel Model Development Group performed initial model runs for three scenarios:

1. Scenario Number 1 is a 2020 analysis that applied the anticipated 2020 demographic and employment growth to a transportation network consisting of existing + committed projects. Committed projects are those that are under construction or are fully and irrevocably funded for construction and are expected to be operational by the 202015 analysis year.

2. Scenario Number 2 is a 2035 analysis that applied the anticipated 2035 demographics and employment growth to a transportation network consisting of all of the existing, committed and proposed projects included in the NCTCOG 2035 Mobility Plan.

3. Scenario Number 3 is a Build-Out analysis that applied the full build-out demographics to the transportation network representing the NCTCOG 2035 Mobility.

NCTCOG provided the results of these initial travel model runs to the project team for interpretation, analysis and reporting. To make the travel forecast results useful within the context of the Collin County Mobility Plan update, the project team used the initial runs performed by NCTCOG to develop a statistical profile of each scenario based on a set of selected measures-of-effectiveness derived from the travel model output.

In addition to compiling the statistical profile of each scenario, the project team used trip tables and networks provided by NCTCOG to perform additional travel model runs to identify capacity deficiencies of the existing plus committed network. The deficiency analysis consisted of applying the 2035 demographics to various 2035 alternative networks.

The results of this analysis were then compared in terms of level-of-service on the transportation system to the statistical profile of the travel forecasts for the build scenario contained in the 2035 Mobility Plan. By comparing the planned improvements against the alternative scenarios, the benefits achieved by the capacity improvements identified in the plan can be measured and evaluated.



The project team used the capacity deficiency analysis to prioritize proposed transportation actions based on the measures of effectiveness, and to suggest additional projects for inclusion in the final mobility plan.

The collaborative effort between the project team and the NCTCOG Travel Model Development Group to develop travel forecasts, statistical profiles, and comparative analysis of transportation system alternatives for the Collin County Mobility Plan provides Collin County with the means to fully explore the various options being analyzed and to determine the best course of action to achieve community goals and optimize the County transportation-system.

4.3. Public Involvement

An intensive public participation program was conducted to provide opportunities for citizens and organizations to be involved in the planning process.

4.3.1. Collin County Planning Board

The Collin County Planning Board acted as the steering committee for the Mobility Plan 2014 Update and provided recommendations to the Collin County Commissioners Court. Meetings were held with the Planning Board throughout the duration of the project to update members of the status and to receive guidance on the development of the Mobility Plan Update.

4.3.2. Community Workshops

A series of four community workshop meetings for obtaining input from interested citizens were held in 2013, on February 19 (Plano), February 20 (Wylie), February 25 (Prosper), and February 26 (McKinney), when the consultant team was compiling relevant data pertaining to demographics, land use, transportation (including transit), and hike-and-bike trails from each of the jurisdictions. The locations of the four workshop meetings were distributed geographically within each of the four County Commissioner districts.

Attendees at each of the Community Workshops received handouts that consisted of the meeting agenda, copy of the presentation, and a comment form questionnaire. During the open house prior to the meeting, attendees browsed boards showing the study area, 2011 Adopted Thoroughfare Plan, 2012, 2020 and 2030 employment density, and 2012, 2020 and 2030 household workshops was to present to the citizens of Collin County



the purpose and objectives of the Mobility Plan Update and to gather input regarding major issues and concerns with the Collin County transportation network. A keypad polling survey of opinions about transportation issues, needs and improvement opportunities was conducted as part of the workshops. Results of the workshops are summarized in **APPENDIX C.**

4.3.3. Meetings with Municipalities

The County Engineering and consulting team met with staff and official representatives of more than 16, out of the total 30, municipalities in the County during the course of the project to go over each city's individual thoroughfare and comprehensive plans and to discuss one-on-one the needs and concerns of the individual cities. The 16 cities the consulting team met with are:

- | | |
|---|--|
| <ul style="list-style-type: none">• City of Allen• City of Anna• City of Celina• City of Farmersville• City of Fairview• City of Frisco• City of Lucas• City of McKinney | <ul style="list-style-type: none">• City of Melissa• City of New Hope• City of Parker• City of Plano• City of Princeton• City of Prosper• City of Richardson• City of Wylie |
|---|--|

4.3.4. Community Meeting

The final public meeting for the Collin County Mobility Plan 2014 Update was held on February 18, 2014, from 7:00 pm to 8:00 pm, at the Conference Center of the Collin County College Central Campus. Total attendance was approximately 85 persons, based on the sign-in sheets. The purpose of the meeting was to present to the public the Draft 2014 Thoroughfare Plan.

During the Open House prior to starting the meeting, attendees viewed display boards showing the study area, draft 2014 Thoroughfare Plan Update, 2011 Adopted Thoroughfare Plan, and Year 2012, 2029, and 2035 population and employment projections as dot density maps. Large plots of the draft 2014 Thoroughfare and Transit Plan Update were provided for attendees to review and make comments. Following the Open House was a presentation on the Mobility Plan Update, with opportunity for attendees



to make verbal comments and ask questions of a panel including the County Engineer and consultant project manager.

A Keypad Polling survey was conducted prior to concluding the meeting. Comments and questions regarding the draft thoroughfare were received and used to create the final thoroughfare plan. A record summarizing the public input received is provided in **APPENDIX C**.

4.3.5. Public Hearing

The Collin County Commissioners Court will conduct a Public Hearing prior to their considering adoption of the Mobility Plan 2014 Update. Citizens have the opportunity to comment on the proposed plan during the Public Hearing.

4.3.6. Project Website

A special internet web site devoted to the Collin County Mobility Plan Update was established as a component of the Collin County website. The CCMP website, http://www.collincountytx.gov/mobility/Pages/mobility_plan.aspx was used to disseminate information and enhance communication about the development and results of the plan update. Draft copies of the thoroughfare plan, notice of meetings, copies of presentations, draft documents, and other products were incorporated in the website for review and comment. A comments form was included for visitors to submit written comments via the web site. The website was also used to provide information about meetings and other pertinent information regarding the mobility plan. The website has the versatility and flexibility to be useful to the County after adoption of the updated Mobility Plan.



5. Existing Conditions

5.1. Overview

Collin County is a fast-developing County in the DFW-Metroplex area. The character of urbanized areas of the County varies considerably across its geographic sub-areas, but largely consists of well-established urban and suburban residential neighborhoods, as well as long-standing commercial developments. The County is steadily maturing beyond a once rural and suburban community into an active metropolitan area with urban characteristics. Redevelopment and infill plus new development in the north and north-eastern parts of the County offer future growth opportunities, as steady development in the southern parts of the County continues.

5.1.1. Geography

According to the United States Census Bureau, Collin County has an area of 886 mi² (2,294 km²). 848 mi² (2,195 km²) of it (95.68%) is land and 38 mi² (99 km²) of it (4.32%) is water. The elevation ranges from 450 to 700 feet above mean sea level. Temperatures range from an average high of 96° F in July to an average low of 34° F in January. The East Fork of the Trinity River drains the western and central portions of the County. The Elm Fork of the Trinity drains the eastern sections. Lake Lavon is a major water body and it provides drinking water to the Collin County and the DFW Metropolitan area.

5.1.2. Subdivision Regulations

The Collin County Commissioner's Court adopted the Collin County Subdivision Regulations to provide minimum standards for land subdivisions and developments and prevent substandard subdivisions in Collin County. The Subdivision Regulations provide for the safety, health and well-being of the general public. The regulations require subdivision construction standards for streets, drainage, water availability and sewage facilities conducive to a superior quality of life and maintainability without imposing a burden to the taxpayers.

5.1.3. Air Quality (Non-Attainment)

The nine-county DFW Metropolitan area region has been designated "non-attainment" for the pollutant ozone by the U.S. Environmental Protection Agency. The air



quality standard is designed to address the prolonged exposure to unhealthy air and to ensure federal funds and approval of transportation activities consistent with regional air quality goals. The non-attainment area has until June 15, 2010 to reach conformity of the federal air quality standards.

5.2. Land Use

2000 Land Use for Collin County is shown in **Table 6** and **Figure 27**. Of the 565,277 acres in Collin County 74% is vacant land and 11% is single family residential. Roadways and water make each make up 5% of the land area of the county.

Table 6: Collin County 2000 Land Use

Land Use	Acres	% of Total Acreage
Single Family	59,640	10.55%
Multi-Family	2,746	0.49%
Mobile Home	2,433	0.43%
Group Quarters	3	0.00%
Office	2,074	0.37%
Retail	5,151	0.91%
Institutional	6,735	1.19%
Hotel/Motel	3	0.00%
Industrial	3,961	0.70%
Transportation	395	0.07%
Roadway	29,026	5.13%
Utilities	1,752	0.31%
Airports	375	0.07%
Parks	5,619	0.99%
Landfill	149	0.03%
Under Construction	887	0.16%
Vacant	418,182	73.98%
Parking	1	0.00%
Expanded Parking	137	0.02%
Water	26,008	4.60%
Total	565,277	100%

Source: NCTCOG

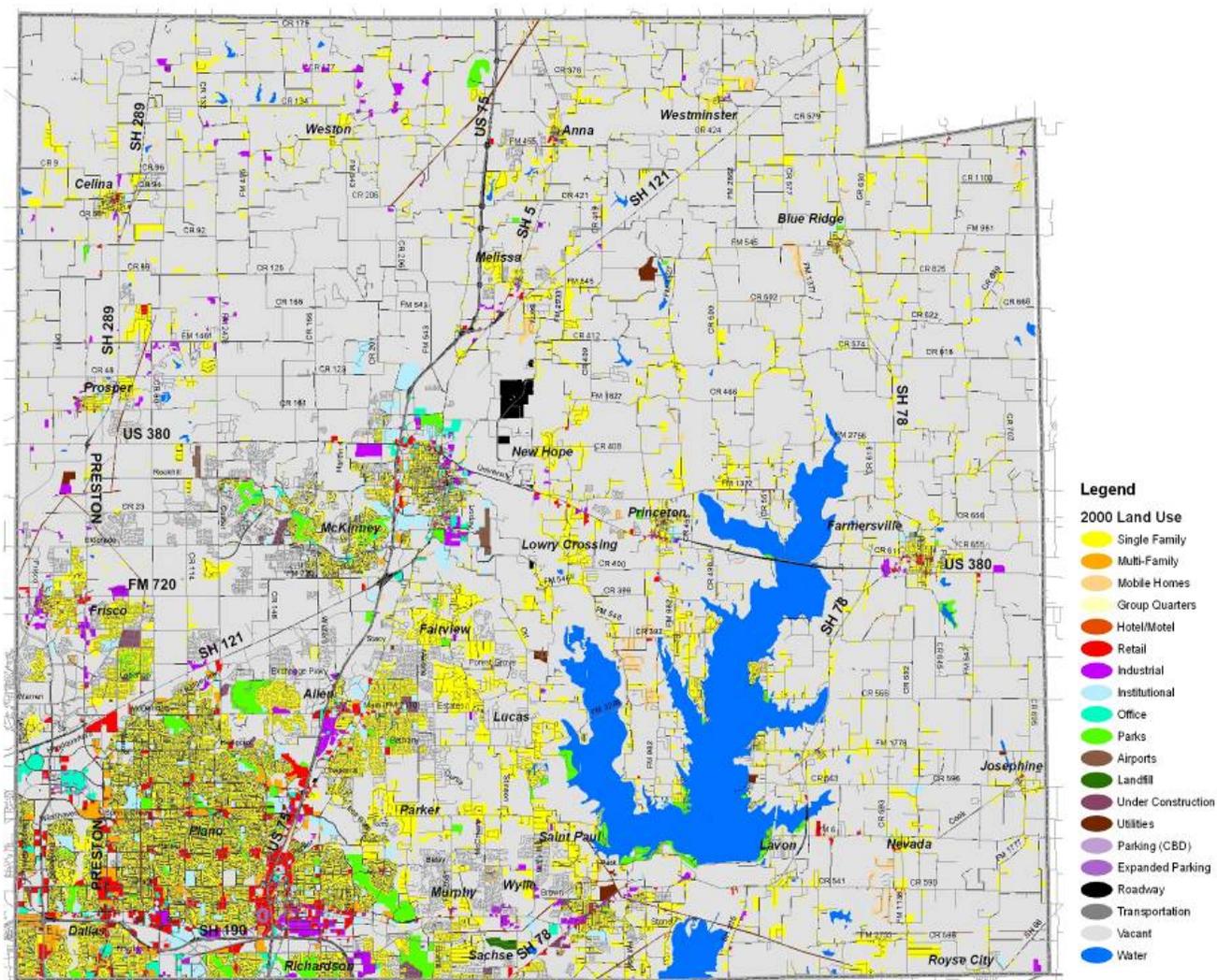


Figure 27: NCTCOG Collin County 2000 Land Use

5.3. Transportation

Collin County is served by a multi-modal transportation system which includes roads, transit, rail, aviation, bicycle, trail and pedestrian networks. The transportation system is further described in the following paragraphs.

5.3.1. Roadway Network

The Collin County roadway system is comprised of a series of major regional thoroughfares that provide for multiple routing alternatives in the heavily urbanized areas, which are located primarily in the southwest quadrant of the County. A network of two-lane



primary and secondary state highways, farm-to-market highways, country roads, and local streets serve the rural areas.

The hierarchical roadway system serves the surface transportation needs of areas and uses within the County. The state highway system provides the basic transportation network, while the farm-to-market highways provide access from agricultural land uses to the major state routes. The County road system provides access to support urban development activity. The expansion of the roadway system has corresponded to the physical growth pattern of the County.

Collin County's major roadway infrastructure consists of the following facilities-

- **US Highway 75** – an eight-lane freeway facility with 6 lane frontage roads extending from the Dallas / Collin County line to Spring Creek Parkway in Plano; a six-lane freeway facility with 4-lane frontage roads from Spring Creek Parkway to the Sam Rayburn Tollway (SRT) in the City of McKinney; and a four-lane freeway facility with 4 lane frontage roads from the SRT to the Collin / Grayson County line (the section from the SRT to just north of US 380 was under construction during the development of this update to bring it to a six-lane facility);
- **US Highway 380** – a five lane roadway (two-directional turn lane in middle) from the Denton / Collin County line to Custer Road; a six-lane divided roadway from Custer Road to Airport Road, east of McKinney; four lane divided from Airport Road to New Hope Road; five lane from New Hope Road east to the Collin County / Hunt County line;
- **SH 289 (Preston Road)** – a six-lane divided roadway from the Dallas / Collin County Line to CR 55 in Celina and a two-lane undivided roadway from CR 55 to the Collin / Grayson County Line;
- **SH 78** – a six-lane divided roadway from the Dallas / Collin County Line to FM 6 and a two-lane undivided roadway from FM 6 to the Collin County/Fannin County line;
- **President George Bush Turnpike (PGBT)** – an eight-lane divided facility through the southern portion of the County from Midway Road at the Denton County line to Shiloh Road at the Dallas County line with six lane frontage roads from Coit Road to Alma Road, and from US 75/Central Expressway to Shiloh Road;



- **Dallas North Tollway (DNT)** – a six-lane divided facility with 4-6 lane frontage roads extending from the Dallas / Collin County Line to US 380, and a two-lane frontage road from US 380 to FM 428; and
- **Sam Rayburn Tollway (SRT)** – a six-lane divided facility from the Denton/Collin County line to the Dallas North Tollway (DNT), a four-lane divided roadway from the DNT to Hillcrest Road, and a two-lane undivided section east of Hillcrest Road.

Since the mid 1990's, the County's pattern of urbanization has continued to radiate northward and eastward. The cities of Frisco, McKinney, Allen, Murphy, Plano, Prosper, Anna, Celina, and Wylie are some of the fastest growing communities in Collin County and the state.

Many roadway projects have been implemented throughout the County to address increasing traffic congestion problems. However, the rate of growth experienced by the quickly urbanizing areas has continued to generate traffic volumes that exceed the planned operating capacities of much of the County's major roadway network.

Since a thoroughfare plan guides the reservation of right of ways needed for the future development of long range transportation improvements, it has far reaching effects on the growth and development of the urbanized area.

5.3.2. Public Transportation and Transit Service

Several transit services are currently available to Collin county residents. These include DART Light Rail, fixed-route and express bus, and para-transit services; the TAPS demand-responsive service; intercity bus service; and the TAP Airport shuttle.

5.3.2.1. DART

DART transit bus and para-transit services extend north from Dallas into southern Collin County. Presently, fixed routes and express routes serve County residents. Transit centers are located in both East and West Plano and in the southeast corner of the Parker Road / US 75 intersection, and facilitate route transfers as well as provide parking for the express services. The East Plano transit Center is located on Archerwood Road, North of Park Boulevard. The West Plano Transit Center is located on Coit Road, south of 15th Street.



Fixed-route bus service is provided on weekdays from approximately 6:00 a.m. to 10:00 p.m. with typical headways ranging from 30 minutes to one hour. Saturday service is available to serve Collin Creek Mall. No Sunday or holiday service is presently available. Express service is provided on weekdays during both the morning and evening peak periods.

In addition to the fixed-route and express bus services, DART offers paratransit service to mobility impaired persons residing in its member cities in Collin County (Plano, Richardson, and Dallas). Lift-equipped vans are utilized to provide this service. For those mobility-impaired persons wishing to ride fixed-route buses independently, travel training is available.

Parker Road Station is the northernmost stop on the North Central light rail corridor. DART's Red Line, the light rail line that connects Plano to downtown Dallas, extends to this station. The Parker Road Station includes a light rail station, a bus transit center, and parking facilities. There are stations located in Collin County at Parker Road, in downtown Plano, and at the Bush Turnpike.

5.3.2.2. TAPS

TAPS Public Transit operates fixed route and on-demand curb-to-curb public transportation for Collin County Rural Areas and for the Cities of Allen and McKinney. TAPS buses run Monday-Friday with the earliest available pickup time at 6:00am and the latest available pickup time at 5:30pm. TAPS does not provide service in Collin County on Saturday or Sunday. TAPS also provides city bus service in the City of Allen and the City of McKinney. TAPS vehicles are not allowed to pick up or deliver in Plano, except that TAPS Public Transit provides express commuter service from Sherman and McKinney to DART's Parker Road Station in Plano.

5.3.2.3. Intercity Bus Service

Greyhound and other intercity bus carriers operate regularly scheduled bus service through Collin County. Greyhound provides service between Sherman and Downtown Dallas with a stop in McKinney.



5.3.2.4. McKinney TAPS Airport Hop Shuttle

The McKinney Shuttle is primarily an airport shuttle service. The Airport Hop is a public transit shuttle ready to and from DFW or Love Field airport 7-days a week departing from and returning to Durant, Okla., Sherman, Texas or McKinney, Texas. Sometimes the Shuttle is utilized to provide an intermodal connection in coordination with TAPS or Greyhound.

5.3.3. Biking and Walking

Biking and walking are a low-cost and effective means of transportation that are quiet, non-polluting, extremely energy-efficient, versatile, healthy, and fun. Bicycles also offer low-cost mobility to the non-driving public, including the young. In the United States, bicycles were a popular means of transportation in the pre-automobile age. As the automobile became more popular, bicycles lost their advantage as well as their place on the road. Now, as cities work to create more balanced transportation systems, and make streets a safe place for all modes of transportation, the bicycle is making a comeback.

A countywide network of bicycle and pedestrian trails is proposed in the Collin County Regional Master Plan. A plan that covers all of Collin County has been created, utilizing the regional planning efforts of the NCTCOG and the local planning efforts of individual communities as a basis for the comprehensive Collin County Trail Plan.

The cities of Allen, Dallas, Frisco, McKinney, Plano and Wylie have each prepared independent bicycle and pedestrian trail plans. These communities are in various stages of the implementation process. The City of Plano has constructed the most miles of trails, 43.8 miles, while the Cities of Frisco and Wylie completed their respective plans in 2002 and 2003, and are in the initial phases of implementation.

A regional plan for a system of bicycle and pedestrian trails has been prepared by the NCTCOG. This system, called the Veloway, outlines a network of trails that link the urban sections of the NCTCOG planning area. The individual plans prepared by Allen, Dallas, Frisco, McKinney, Plano, and Wylie have each been integrated into the Veloway, and therefore, may ultimately become part of a much larger regional system.

The Cities within Collin County are renowned for the quality and quantity of their trails. Currently there is approximately 1 mile of trail for every 2,900 people in the county; which places this area above the rest of Texas in regards to Trail Level of Service. There



are currently 995 miles of existing and planned trails of various types in Collin County. Approximately 269 of these miles exist today or are funded for implementation in the near future. **Figure 28** displays the mileage and level of service for trails in Collin County.

Trail Mileage			
Trail Type	Existing / Programmed	Planned / Proposed	Total
Hard Surface	228.4	656.0	884.4
Soft Surface	22.1	48.7	70.8
Equestrian	16.9	15.5	32.4
Mixed Surface	1.3	6.8	8.1
Total	268.7	727.0	995.7

	Existing Miles of Trails	Current Level of Service*	2040 Trail Needs to Maintain Current Level of Service**
Hard Surface	228.4	1 mile per 3,425 people	445.7 miles (deficit of 217.3 miles)
Soft Surface	22.1	1 mile per 35,400 people	43.1 miles (deficit of 21 miles)
Equestrian	16.9	1 mile per 46,292 people	32.9 miles (deficit of 16 miles)
Mixed Surface	1.3	1 mile per 601,801 people	***
Total	268.7	1 mile per 2,912 people	524.3 miles (deficit of 255.6 miles)

*Based on a 2010 Census Redistricting Data population of 782,341
 **Based on a forecasted population of 1,526,634
 ***Because of the low number of existing miles of this facility type, future needs can not be accurately forecasted.
 Source: US Census Bureau; North Central Texas Council of Governments 2040 Population Forecasts

Source: Collin County Regional Trails Plan

Figure 28: Collin County Hike & Bike Trail Mileage and Level of Service

The Collin County Regional Trails Master Plan was developed to provide coordination and connectivity between cities and towns for the development of a county-wide trail system. The plan builds upon the planning efforts of the 31 cities and towns within the county and other regional studies, such as the North Central Texas Council of



Governments' Regional Veloweb and the Six Cities Trails Plan in Dallas and Collin Counties.

The key components of plan define high-priority trail corridors that provide regional linkages and identify and address gaps between cities. The plan encourages corridor preservation and multi-jurisdictional implementation. The plan serves as a tool that gives guidance to Collin County for evaluating requests submitted as part of its County Parks and Open Space Project Funding Assistance Program.

5.3.4. Airport System

Presently, there are eight general aviation airports in Collin County. These include one public airport (McKinney National Airport), two private airports which are open to the public (Air Park Dallas and Aero Country), and seven private airports which are not open to the public except for emergency use (Lavon North, JSI, Square Air, Mullins Landing, Baylie, Short Stop, and Bishop Landing).

The three airports open to the public have runways with asphalt surfaces and lights, while the seven private airports have grass runway surfaces and no runway lighting. Collin County Regional is the only airport in the County with an FAA control tower. **Figure 29** displays the location of the existing public use general aviation airports in Collin County.

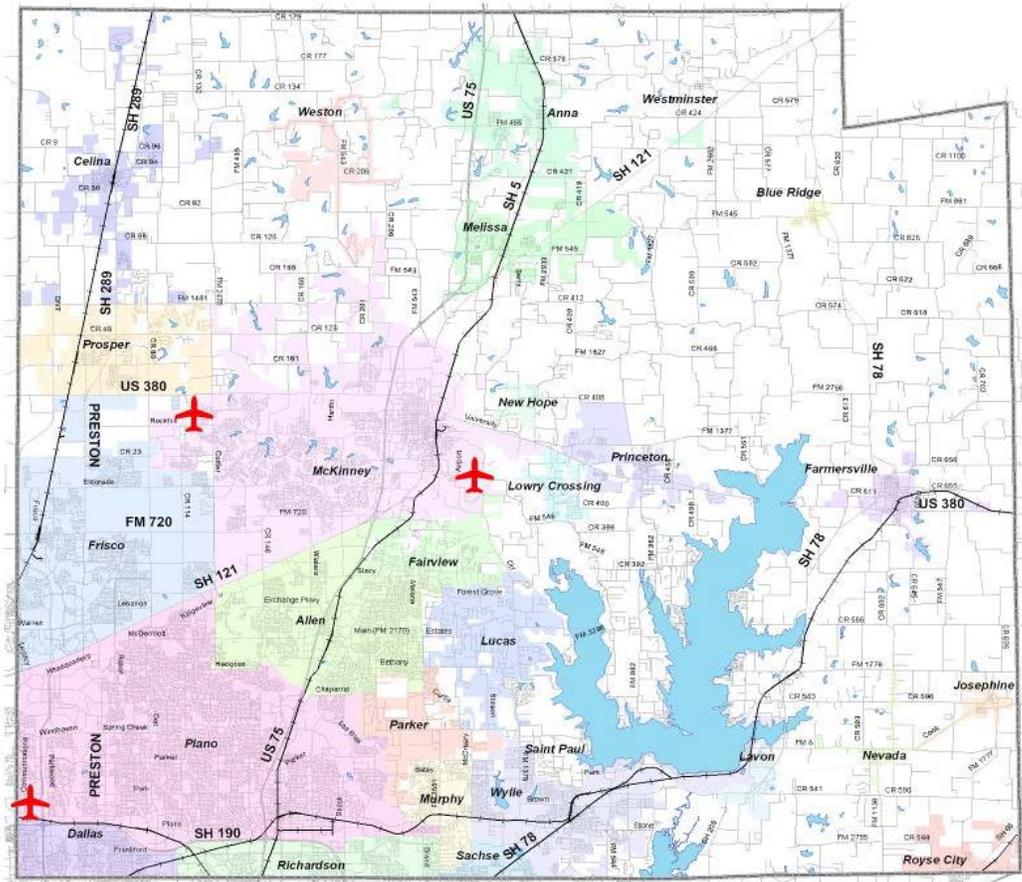


Figure 29: Collin County Public Airports

McKinney National Airport is a general aviation reliever airport in the DFW Metroplex with future commercial service goals. The airport is an air transportation center and economic engine for the North Dallas Region facilitating general aviation and business aviation and related services supported by an aggressive marketing program and aeronautical service, infrastructure and facility development. The City of McKinney and McKinney Airport Development Corporation are committed to expanding this North Texas aviation resource as the regional community continues to grow and prosper.

5.3.5. Freight Movement

Goods movement is the lifeblood of Texas economy, and specifically the DFW Metropolitan Area. The region represents one of the largest “inland ports” in the nation, where freight is moved, transferred, and distributed to destinations across the State and around the World. North Central Texas has one of the most extensive surface and air



transportation networks in the world, providing extensive trade opportunities for the more than 600 motor / trucking carriers and almost 100 freight forwarders that operate out of the DFW area.

5.3.5.1. Rail

Collin County is served by three freight railroads – Union Pacific Railroad Company (UP), Burlington Northern Santa Fe Corporation (BNSF) and Kansas City Southern Railroad Company (KCS).

UP operates two lines through Collin County- an east-west line from the City of Wylie to Greenville in Hunt County to the east, and a north-south line through the City of Frisco and connects to the City of Sherman to the north.

BNSF operates a north-south line through the City of McKinney that connects to the City of Sherman to the north.

KCS operates an east-west line through the City of Wylie that connects to the City of Greenville in Hunt County to the east and to the City of Denton to the west.

The North East Texas Rural Rail Transportation District (NETEX) controls 65.6 miles of operational railroad and a total railroad corridor of 88.8 miles in Northeast Texas between the Titus-Franklin County line and Wylie. This line was originally the "C-branch" mainline of the St. Louis Southwestern Railway (Cotton Belt). The operator of the line is the Blacklands Railroad. NETEX is an established governmental subdivision of the State of Texas representing six contiguous counties across northeast Texas, overlapping the service area of TAMU-Commerce, including: Titus, Franklin, Hopkins, Delta, Hunt, & Collin Counties. The District was formed in 1995 to save the former St. Louis Southwestern (Cotton Belt) Railway's Dallas Division, or "C-Branch," from abandonment and preserve rail service for current and future customers along the corridor and ensure the potential for long-range economic growth in the region. NETEX owns, or jointly owns with the State of Texas, 65.6 miles of operational railroad plus 23.2 miles of right of way with rails removed for a total corridor length of 88.8 miles.

5.3.5.2. Truck

Major truck corridors within Collin County include US 75, US 380, and SH 78; truck traffic within these corridors range from 500 to 10,000 trucks per day according to the *Freight Bottleneck Study* by NCTCOG.



6. Recent Efforts

Several studies have been done to address the transportation needs of Collin County. These studies include such transit modes as commuter rail, light rail, tollways, new roadways, and freight rail. In addition, several projects have been completed since the last Mobility Plan update in 2007. These projects, as well as some prospective projects are described in this section.

6.1. Regional Rail Corridor Study

The North Central Council of Governments (NCTCOG) and its Regional Transportation Council (RTC), in partnership with Dallas Area Rapid Transit (DART), Denton County Transportation Authority (DCTA), and the Fort Worth Transportation Authority (FWTA) conducted a comprehensive Regional Rail Corridor Study (RRCS) in May 2003. The study focused on eight passenger rail corridors throughout the Dallas-Fort Worth Metropolitan Area. The RRCS effort included a review, inventory, and assessment of the transit needs throughout the eight rail corridor areas. The overall goal was to provide sound data and recommendations to decision makers regarding the region's transit needs. Study results refined recommendations for the Metropolitan Transportation Plan, guided decisions regarding regional rail staging and implementation, and outlined financial and institutional structures for consideration by regional policy makers.

6.2. Dallas North Tollway Extension- 3, SRT to US 380

The extension of the Dallas North Tollway from Sam Rayburn Tollway (SRT) to US 380 north of Frisco has been completed, providing three main lanes each way as a vital route from Frisco and the fast-growing cities to its north to downtown Dallas.

6.3. Dallas North Tollway Extension- 4, US 380 to Grayson County Line

Planning is under way for an extension of the Dallas North Tollway from US 380 north to the Grayson County line. The North Texas Tollway Authority Board of Directors has adopted an alignment which is about 13.5 miles. Collin County has built a two-lane roadway on the alignment, from US 380 to FM 428 North of FM 428, so that drivers can begin using this corridor.



6.4. President George Bush Turnpike- Eastern Extension

The construction of the President George Bush Turnpike Eastern Extension from SH 78 east to IH 30 has been completed. The toll road passes through Garland, Sachse and Rowlett and includes a one-mile bridge over Dallas' Lake Ray Hubbard.

6.5. Sam Rayburn Tollway (SRT/ SH 121)

State Highway 121 runs from downtown Fort Worth, TX to Bonham, TX. SH 121 is very heavily traveled within Collin County, and has become an urban highway due to rapid growth of the County. NTTA and TxDOT have completed construction of a 26-mile facility through Collin and Denton Counties, including a small segment in Dallas County. The NTTA operates this facility as a tollway and has named it the Sam Rayburn Tollway (SRT). In Collin County the SRT stretches from the Collin County/Denton County line northeastward to US 75 in McKinney.

6.6. Collin County Outer Loop

Collin County Outer Loop is proposed to connect the future extension of DNT with SH 121, US 75, US 380, and on to Rockwall County. This controlled access facility will provide the necessary east-west link in the County. The travel demand modeling performed as part of this Mobility Plan Update projects the need for two main lanes in each direction and two frontage roads in each direction. The project to build two lanes along the alignment has been completed from US Highway 75 eastward to SH 121. Additional segments will be developed as needed.

6.7. US 75 Corridor Study

At the printing of this Mobility Plan Update, the Texas Department of Transportation is preparing a Corridor Study for the reconstruction and widening of US 75 from IH 635 to SH 121. The length of this corridor is approximately 21.1 miles and is within the Cities of Dallas, Richardson, Plano, Allen and Fairview, and it is located in Dallas and Collin Counties.



6.8. Blacklands Corridor Study

NCTCOG is conducting a feasibility study of the Blacklands Corridor, including the NETEX abandoned rail that once served southeast Collin County and the northeast Texas region.

The rail line was abandoned and removed in early 1990s. A study is currently being conducted by NCTCOG to determine the feasibility of replacing the rail and its economic impact to the Northeast Texas region. The NETEX right of way section between the cities of Lavon and Wylie involves federal lands, wetlands, county roads and the Kansas City Southern Classification Yard.



7. Recommendations

The Mobility Plan influences the transportation access and mobility, the desirability of areas as locations for development, and the pattern and density of land use. It recognizes the importance of the relationship between land use and transportation. Land use alone, to a large extent, determines the travel demand and the function of the transportation in an area.

Design standards must accommodate the changing character of traffic and road function. The functional classification and context sensitive design of thoroughfares should be related to changing land uses and the extent of existing and future development.

The Collin County Mobility Plan 2014 Update is shown in **Figure 30**. The Mobility Plan Update includes delineation of functional classes of existing and proposed major thoroughfares. The rationale for development of the updated Mobility Plan includes the following criteria:

- Traffic service
- System relationship
- Network continuity
- Land access
- Growth potential
- Multi-modal transportation
- Development constraints
- Maximizing use of the existing street network, and
- Community values.

The mobility plan addresses not only the foreseeable transportation improvement needs over the 25-year planning period but also includes consideration of requirements for preservation of rights-of-way over a longer term. This right of way preservation function of the thoroughfare plan is an important consideration in subdivision platting in order to avoid short-sighted development decisions which overlook the opportunity to preserve future rights-of-way needed to accommodate the longer-term development of the County's thoroughfare network.

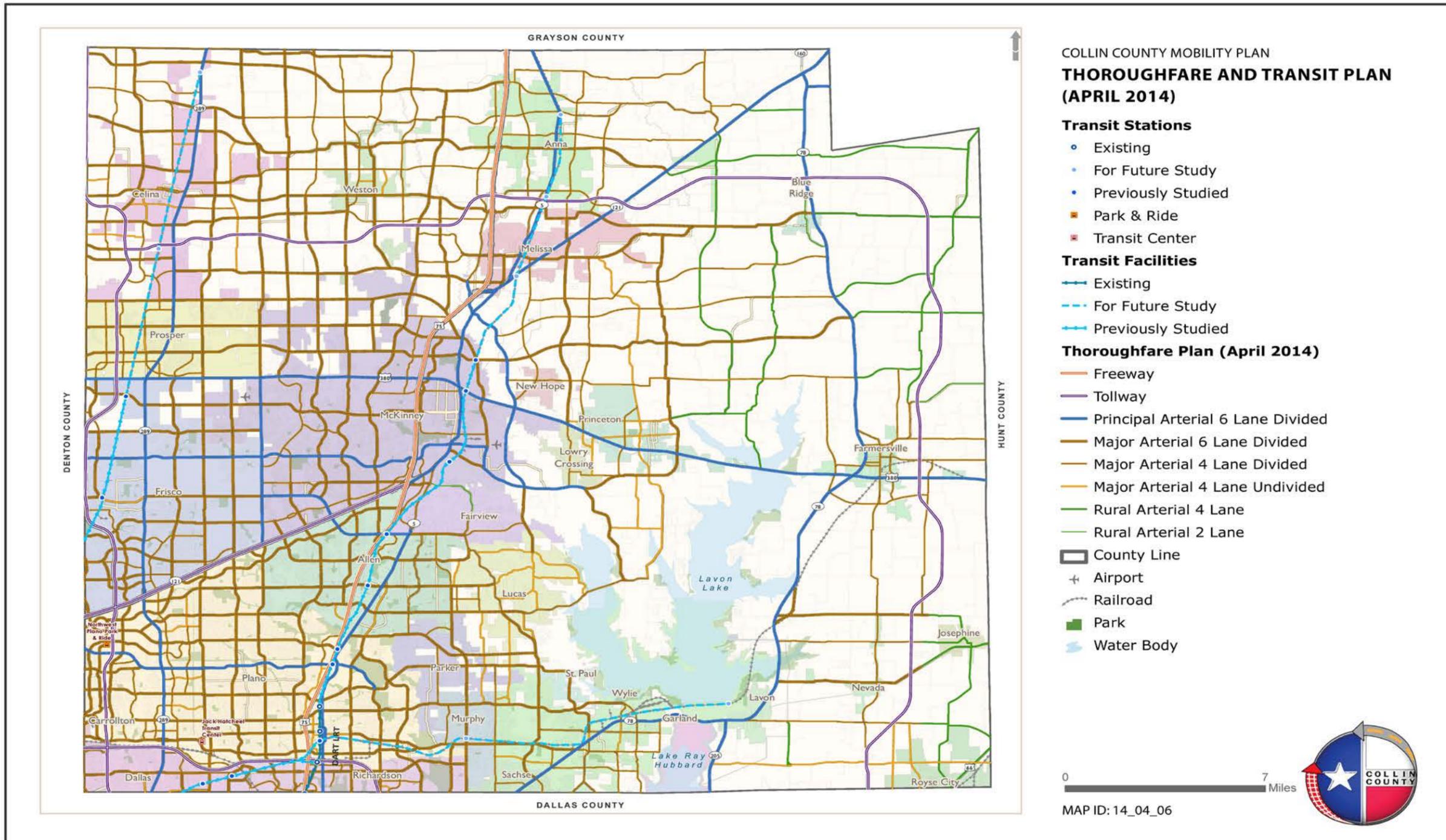


Figure 30: Collin County Thoroughfare and Transit Plan



7.1. Thoroughfare Development

The following roadway functional classification and design standards are intended to provide regional consistency, yet be broad enough to allow for local flexibility. The plan intends to standardize, from a regional perspective, how roadways are characterized as the federal, state, and local levels.

7.1.1. Functionally Classified System of Thoroughfares

The various roadways on the Thoroughfare Plan have been functionally classified according to the uses for which they are intended. These uses provide a balance between traffic movement and property access.

In general, freeways and tollways are designed to be high speed facilities with controlled access that will serve very long trips and very high traffic volumes. Principal arterials are designed to serve moderate to long trips and moderate to high traffic volumes, but operate at lower travel speeds than freeways and tollways and are characterized by restricted, rather than prohibited, access. Major arterials are designed to serve trips of moderate length and moderate traffic volumes at lower average operating speeds with somewhat restricted access. Finally, rural arterials are designed to serve corridor movements through low density areas. The following are these thoroughfare designations with additional descriptions:

- **Freeways/Tollways** – A fully controlled access facility on expansive right of way (ROW) serving traffic within an urban area and linking urban areas. Freeway/Tollways include interstates, urban freeways, and tollways.
- **Principal Arterial (P6D)** – A major arterial roadway which serves to interconnect regional roadways and link identifiable neighborhood areas with major activity centers improved to accommodate high-volume locations allowing for grade separations, curb and median access controls, and signal progression.
- **Major Arterial (M6D, M4D, M4U)** – Roadways which augment principal arterials with emphasis on the distribution of vehicles to higher and lower roadway classes and land access.
- **Rural Arterial (RA4, RA2)** – Roadways primarily in the rural areas of the county that augment minor arterials with emphasis on the distribution of vehicles to higher roadway classes and land access.

The Mobility Plan includes the Thoroughfare and Transit Plan map (**Figure 30**) which depicts the functionally classified system described above.

7.1.2. Roadway Typical Standards

Design and construction of the thoroughfare system should comply with recommended design standards, consistent with TxDOT design guidelines as well as criteria contained in county and city subdivision regulations. **Figures 31, 32, and 33** show the typical sections for the Mobility Plan Update functional classifications.

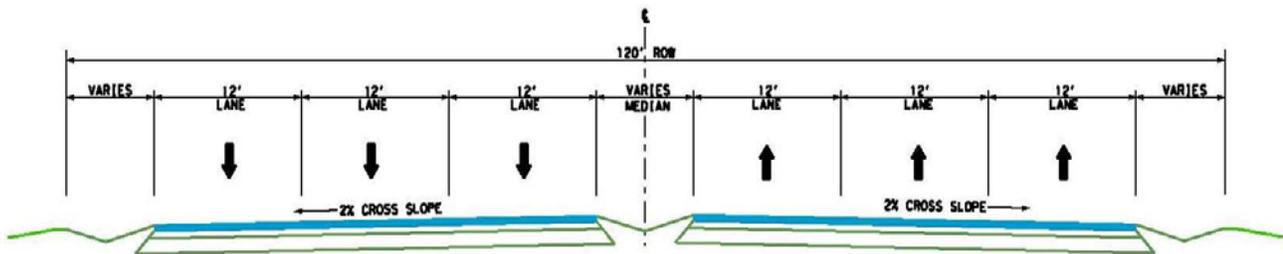


Figure 31: Typical Section – P6D and M6D Six Lanes Divided with Median

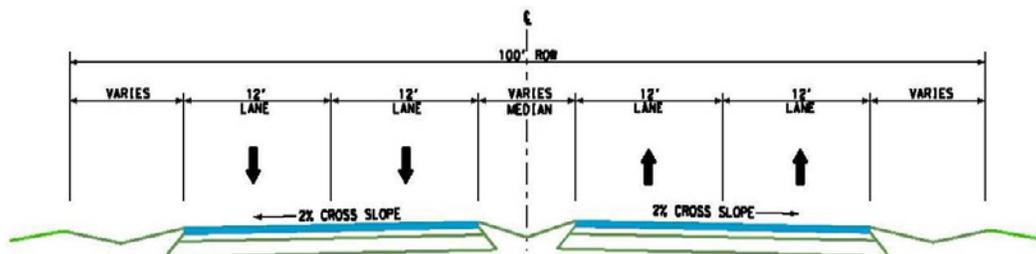


Figure 32: Typical Section – P4D and M4D Four Lanes Divided with Median

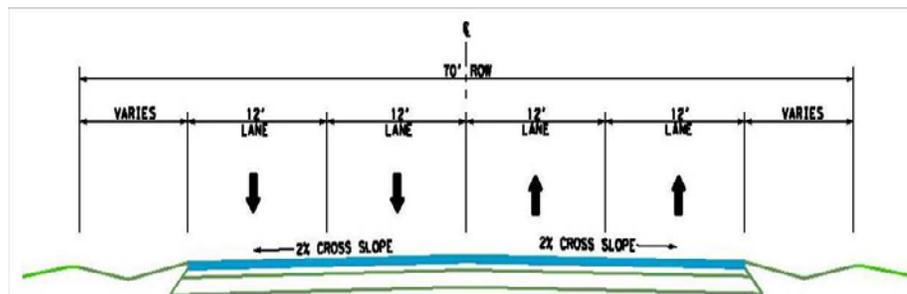


Figure 33: Typical Section – P4U and M4U Four Lanes



7.1.3. Roadway Geometric Design Standards

Collin County, in addition to identifying and functionally classifying roadway improvements, establishes appropriate geometric design standards for each roadway classification. The purpose of these standards is to ensure that each roadway type provides the intended level of safety and functional operation. These standards comply with national and regional standards such as those published by the American Association of State Highway Officials (AASHTO) and the North Central Texas Council of Governments (NCTCOG).

Standards are provided for the following design elements for each roadway type:

1. Right of way width
2. Lane width
3. Median width
4. Parkway width
5. Design speed
6. Vertical grade
7. Stopping sight distance
8. Horizontal curvature
9. Vertical clearance, and
10. Lateral clearance.

Of particular importance to the Collin County Thoroughfare Plan are the recommended roadway right of way widths. These are a function of the typical cross-section for each roadway functional classification. A typical cross-section is comprised of pavement width, median width, and parkway width.

Pavement width varies according to the number of traffic lanes and the width of the lanes. Driving lane widths are typically 11-12 feet in urban areas.

The width of medians varies according to the use for which the median is intended, a median width of 14-16 feet will permit the construction of a 10-12 feet deceleration and storage lane for left-turning vehicles. A median width of 22 feet is needed to provide a full vehicle refuge for a passenger car in the median, while a 30 feet median will accommodate dual left-turns at signalized intersections. When right of way is being preserved for future



roadway widening, the additional width required for the additional lanes is usually included in the median.

Parkways are the areas between the curb or pavement edge and the right of way line. They must be of sufficient width to accommodate non-traffic functions such as sidewalks and utilities. When right of way permits, a wider parkway can be used to buffer the surrounding areas from the roadway. The typical width of a parkway in an urban area is 15 feet. However, larger parkways are generally required in rural areas to provide for paved shoulders, clear recovery zones, and drainage swales.

Table 7 displays the recommended geometric design standards for each thoroughfare type on the Collin County Thoroughfare Plan. It must be recognized that many of the thoroughfares on the Collin County Thoroughfare Plan are also thoroughfares on various city plans. While standards within a city are under the control of that city, in the case in which the County is providing funding for the development of a thoroughfare, any conflicting standards between the County and a city must be negotiated to the satisfaction of the two entities. The same is true for any County thoroughfares that are also State highways. It is recommended that Collin County follow any of the appropriate NCTCOG standards for elements of the mobility plan for standards are not listed in this update.

The design standards should be tailored to meet the full range of circumstances occurring within the planning area, including land use, urban design, and valued community resources as well as mobility and access needs. For example additional right of way should be acquired at roadway intersections in order to accommodate dual left turn lanes and right turn lanes. Standards should create an attractive environment for pedestrians for boulevards, downtown streets and squares, collector streets, residential streets, lanes, and alleys. Bikeways and sidewalks should be integrated in typical sections and design standards. Crossings of trails (bike and pedestrian) should be considered in the design of thoroughfares so that a much as is possible thoroughfares do not become barriers to the continuity of trails. The mobility plan's standards for corridor and roadway design should ensure design sensitive to the regional context as well as the corridor's features and surroundings.

- **Context Sensitive Design** - The design criteria embodies the principles of Context Sensitive Design, to consider the total context within which future transportation improvements will exist. Context sensitive design means establishing roadway



standards that relate not only to mobility and to access, but also to keeping streets and sidewalks in scale with development, making streets and trails connect, promoting transit-supportive densities, and including special standards for transit oriented development. A typology of street types will be identified, each of which will be accompanied by a unique set of use, dimensional, and design standards.

- **Access Management** - Access management is necessary to reduce interference and allow movement as the primary function of streets. Access control options range from full control of access for Interstate and State highways and freeways, to controls over driveway spacing for arterials or other public streets. Traffic conflicts at the intersections of driveways with arterial streets create traffic congestion, increase delay, and reduce traffic safety.. Arterial intersections with other public streets and driveway access points should be designed to limit speed differentials between turning vehicles and other traffic. The County should follow the access management policy of the State or the nearest city to provide consistency along the network of thoroughfares.



Table 7: Collin County Geometric Design Standards

	Functional Classification/Roadway Type*							
	P6D	P4D	P4U	M6D	M4D	M4U	RA4	RA2
Number of Traffic Lanes	6	4	4	6	4	4	4	2
Lane Widths (feet)	12	12	12	12	12	12	12	12
R-O-W Widths (feet)	120	100	70	120	100	70	110	90
Design Speed (mph)	40-50			35-45			55-65	
Grade (percent)								
Maximum	6 %			7 %			6 %	
Minimum	0.5 %			0.5 %			0.5 %	
Stopping Site Distance (feet)	350-500			300-425			475-500	
Horizontal Curvature (degrees)	5.5-13.5			7.0-13.5			3.0-5.5	
Vertical Clearance (feet)	15			15			15	
Lateral Clearance (feet)	6			6			6	

Note: Median widths vary according to the use for which the median is intended.

A median width of 14 – 16 feet will permit the construction of a 10 – 12 feet deceleration and storage lane for left-turning vehicles.

A median width of 30 feet will accommodate dual left-turns at signalized intersections.

When right of way is being preserved for future roadway widening, the additional width required for the additional lanes is usually included in the median.

A parkway is the area between the curb or pavement edge and the edge of right of way.

Typical parkway width in an urban area is 15 feet.

* See “Collin County Thoroughfare Plan Map” for roadway types.



7.2. Public Transportation

Current plans and programs were reviewed for the future transit improvements planned by the Dallas Area Rapid Transit (DART), TAPS Public Transit (TAPS), municipalities and NCTCOG. Fixed route, scheduled bus transportation is currently being provided by DART in Plano and by TAPS Public Transit in McKinney and Allen. On-demand transit service is currently being provided by both DART and TAPS. Expansion of these services will be made by these agencies according to the feasibility, based on demand.

Planned extension of light rail transit or commuter rail transit service connecting Collin County communities with Dallas and other parts of the Metroplex are shown as part of the Mobility Plan.

The results of the travel demand modeling indicate that there several major thoroughfares that will have demands far beyond their capacity by 2035 (some by 2020). Further study is needed to investigate opportunities for providing some form of mobility that better matches the capacity with the demand. In this Update it is proposed that one of the options will be rail transit, even though rail transit will not totally solve this problem,. The NCTCOG Regional Rail Corridor Study determined the feasibility of extending transit services within Collin County beyond the current DART service area. This study evaluated the engineering feasibility and environmental implications of implementing rail transit in the existing Cottonbelt and Santa Fe railroad corridors. It is understood that DART is limited in its authority to provide service only to those cities which are, or become, members of DART. However, this does not change the need for additional capacity. Therefore, it is recommended that the cities and Collin County work together to determine ways to further rail service, whether with DART, or some other means.

Another option for evaluation is the potential for bus rapid transit. It is recommended that the possible use of power easements or other express bus routes for cross town movement, possibly connecting to rail or bus transit stations should be evaluated.

7.3. High Occupancy Vehicle Lanes

High occupancy vehicle (HOV) lanes currently are in use on US 75 as far north as Allen. HOV lanes provide travel time savings for express buses, carpools, vanpools, motorcycles, and any other motorized vehicles carrying at least two or more persons. The further use of such lanes should be evaluated with the expansion of any of freeways.



7.4. Aviation

According to the National Flight Data Center, there are 229 airports or airstrips located within the 16-county NCTCOG region. These airports range in size from 1,800' x 40' turf runway to the 17,520 acres of Dallas/Fort Worth International Airport (DFW). Only two airports currently provide air carrier services within the region, DFW and Love Field.

The McKinney National Airport is one of five general aviation facilities located in the north Dallas County and Collin County area and is second in annual operations to Addison Municipal Airport. The 7,000 foot runway permits the municipal airport to accommodate aircraft larger than those handled by a utility airport. As airspace becomes more congested for airports interior to the region, use of the McKinney National Airport can be expected to increase and be coupled with growth from personal and business operations conducted from the airport.

7.5. Bicycle and Pedestrian

NCTCOG's Mobility 2030 plan calls for bicycle and pedestrian improvements including the regional Veloweb system, an on-street bicycle improvement program, bicycle and pedestrian transportation districts and support for local pedestrian and bicycle initiatives. The regional Veloweb consists of a system of interconnected trails, recommended to be a minimum of 12 feet in width and grade separated from thoroughfares for safety.

Collin County completed a Trails Master Plan in 2012. This plan extensively examines the potential for trails in the County and makes recommendations for implementation; therefore, this information is not repeated in this Mobility Plan. However, it is recommended that the provisions of the Trails Master Plan be incorporated into this Mobility Plan insofar as it complements or is affected by the facilities addressed in this Mobility Plan. Of critical importance is the inclusion of grade-separated crossings where possible along major thoroughfares or highways. Grade separated crossings at creeks, or where sufficient grade separation exists, should be considered along major thoroughfares and highways. It is critical to think long-term as bridges are built to last many decades. In addition both County and City staff should consider trails when reviewing development plats, in the same way that right of way for thoroughfares are considered. Working with developers, to fit into their plans while providing connectivity to the overall trails plan, even between cities, will result in the optimum Implementation of the Trails Master Plan.



7.6. Freight

NCTCOG conducted a Freight Bottleneck Study that looked at truck traffic movement throughout the DFW Metroplex. Truck freight bottlenecks are most prevalent at the following locations:

- Intermodal connectors that have not been properly designed or maintained for heavy truck traffic;
- National highway safety corridors that lack sufficient capacity to handle freight and passenger movements safely and efficiently;
- Highway interchanges that lack “acceleration lanes” for freight vehicles;
- Industrial districts and related connectors that lack proper signage for out-of-town drivers;
- Corridors on which truck stops and other terminal locations cannot meet the demand for overnight truck parking;
- Warehouse districts improperly situated close to residential uses.

Action steps to help reduce the truck bottleneck situation include:

- Pursue Intelligent Transportation Systems, capacity, safety and geometric improvements on existing truck routes as part of Trans-Texas Corridor 35;
- Determine applicability of dedicated truck lanes and truck lane restrictions in the region;
- Review hazardous cargo routing system;
- Expand idle reduction technologies;
- Expand Intelligent Systems network supporting truck movements.



8. Implementation

Implementation of the Mobility Plan will assist Collin County with keeping pace and facilitating desired growth patterns in the County. Development of a project implementation plan combines transportation needs with capital cost estimates and available funding to create a plan that can effectively be implemented and actually be used to serve the transportation needs of the community. To this end a “2020 Fiscally-Constrained Transportation Plan” has been developed to determine what improvements are possible by the 2020, given the funding sources that are projected to be available. The projects chosen for this plan were roadways that were projected to be over-capacity as a result of the 2020 travel demand model and which have additional capacity (lanes) available (less than ultimate six lanes). Many of the projects are within the corporate limits of cities; therefore, this plan assumes that Collin County and the cities will be partners in sharing the cost of these projects. Likewise, some of the projects are State projects, so a partnership with the State of Texas is assumed. **Table 8** lists the projects included in the 2020 fiscally-constrained plan shown on the following page. **Figure 34** shows the project locations. For further information about the fiscally-constrained plan see **Appendix C**.



Table 8: Funding Requirements for Street and Arterial Projects,

Project	Total
5th St/Parkwood Blvd	\$ 9,700,000
5th St/Parkwood Blvd	\$ 3,800,000
Alma Rd	\$ 6,500,000
Alma Rd	\$ 5,100,000
Bethany Dr/Lucas Rd/FM 1378	\$ 30,500,000
Coit Rd	\$ 10,700,000
Coit Rd.	\$ 10,700,000
Coit Rd.	\$ 8,700,000
Cotton Gin Road	\$ 3,200,000
Chelsea Blvd/Hardin Rd	\$ 6,000,000
FM 2478/Custer Rd	\$ 12,700,000
FM 2514/Parker Rd	\$ 9,200,000
FM 2514/Parker Rd	\$ 10,700,000
FM 2514/Parker Rd	\$ 11,200,000
FM 2551/Murphy Rd.	\$ 29,100,000
FM 455	\$ 3,100,000
FM 455	\$ 1,800,000
FM 546	\$ 6,600,000
FM 982	\$ 22,700,000
Independence Pkwy	\$ 15,900,000
Lake Forest Dr	\$ 4,700,000
Park Blvd	\$ 5,600,000
Ridgeview Dr	\$ 17,600,000
SH 121	\$ 18,300,000
SH 121	\$ 24,200,000
SH 205	\$ 12,900,000
SH 5/Greenville Ave	\$ 5,100,000
SH 5/Greenville Ave	\$ 860,000
SH 5/Greenville Ave	\$ 10,880,000
SH 5	\$ 2,370,000
SH 5	\$ 6,570,000
SH 78	\$ 28,000,000
Shiloh Rd	\$ 8,800,000
Stonebrook Pkwy	\$ 9,400,000
Woodbridge Pkwy	\$ 4,500,000
Windhaven Pkwy	\$ 4,700,000
US 380	\$ 13,100,000
Arterials and Streets	\$ 395,500,000

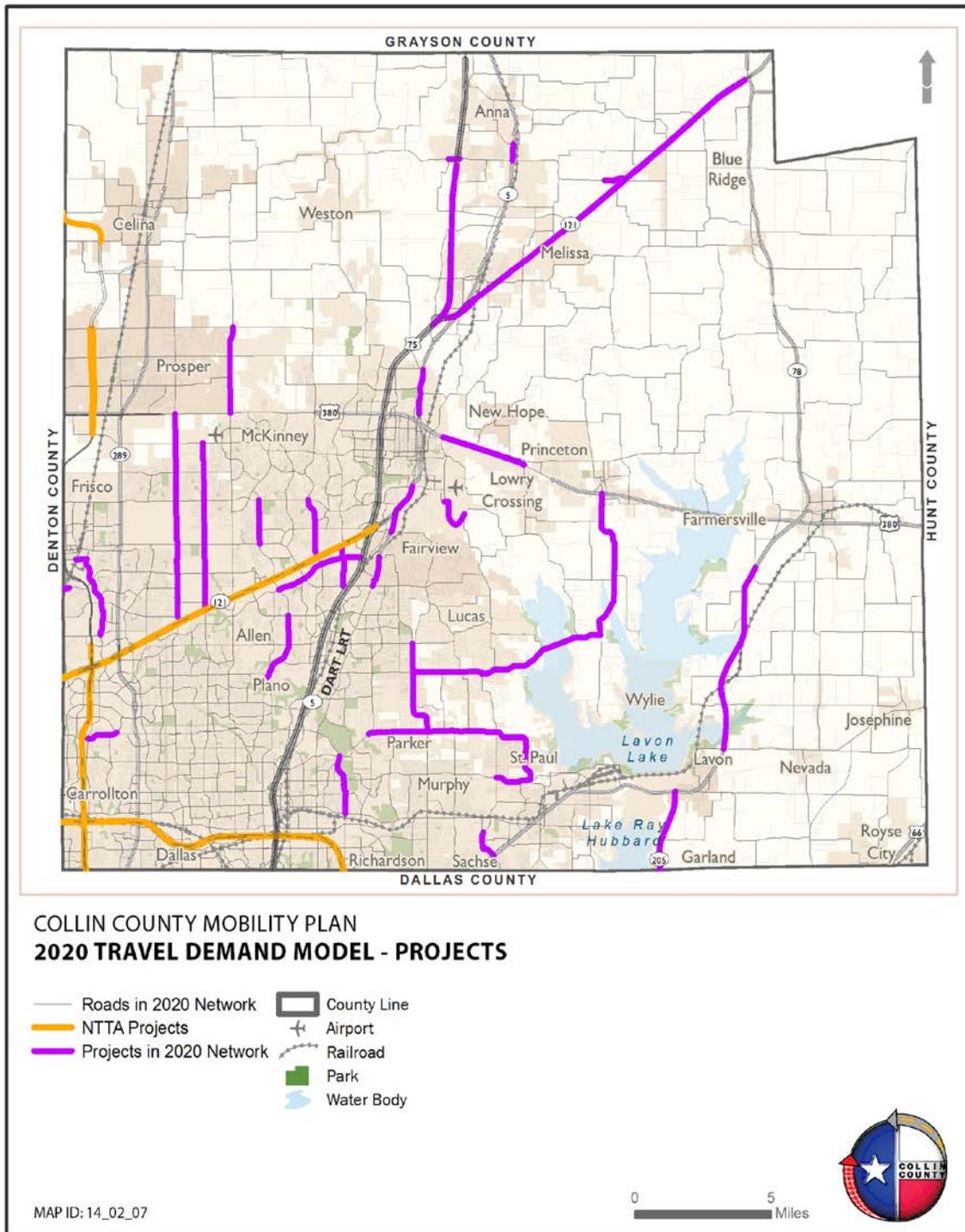


Figure 34: Projects included in the Fiscally-Constrained Plan.



8.1. Continuing Planning Process

The majority of the improvements and projects included in the Collin County Mobility Plan Update are not fully developed at this time. In keeping with State and Federal requirements, further study and public involvement will be necessary prior to actual construction of the various proposals included here. This project-level study and discussion will address issues such as specific alignments, impacts on residents, and actual project design and construction. This additional work on each project will require citizens, planners, and elected officials to continue to work together to assure that the transportation system in Collin County achieves the goals set forth in this Plan.

As projects are completed, or additional information becomes available, modifications to the contents of this Plan will be needed. To facilitate this, the Collin County Planning Board should conduct a workshop of elected officials each year to review the projects included in this document, and modify the project lists and prioritization as appropriate. In addition, it is recommended that the forecasts used as a basis for developing this Plan be updated at least every five years, and the Plan be reviewed and revised to reflect those modifications. Each of these activities should be subject to a public review and comment period and formal approval of the outcome by each of the local governments. Additional recommendations for continuing the planning process are:

- Update the Mobility Plan every 5 years;
- Update the Master Trails Plan;
- Coordinate with DART and TAPS;
- Coordinate with NCTCOG;
- Monitor the need for the future development of the Outer Loop; and
- Review the NCTCOG conclusions concerning the Blacklands Corridor.

The development of a new Mobility Plan for Collin County has been a team effort among numerous agencies and organizations. Among these are the Collin County Commissioners Court, the Collin County Planning Board, the Collin County Engineering Department, the local municipal jurisdictions within the County, the NCTCOG, and the consulting team consisting of Jacobs Engineering Group Inc, Freese and Nichols, Inc., Alliance Transportation Group, Inc. and Strategic Community Solutions, LLC..

During the plan development process, four principal tasks were undertaken and completed. These were as follows:



1. A comprehensive assessment of existing and projected levels of population and employment within the County was conducted;
2. The need for enhancements to the existing thoroughfare system was evaluated;
3. Multi-modal transportation improvements that will serve the needs of Collin County residents to the year 2035 and beyond were identified; and
4. A fiscally constrained plan of projects was developed for 2020.

This process has resulted in significant revisions to the 2011 Collin County Transportation Plan relative to the recommended roadway, transit, and bicycle and pedestrian trails improvements. However, it should be noted that the Plan Update process is a dynamic process. This Mobility Plan will serve the transportation needs of area citizens and guide major transportation investments well into the future. It should be reviewed and updated on a countywide basis every five years to respond to the changing conditions that will occur.



Appendices

Appendix A: Definitions

Appendix B: Demographic Projections

Appendix C: Fiscally-Constrained Plan

Appendix D: Summary of Meetings



APPENDIX A: DEFINITIONS



Appendix A. Definitions

1. Acceleration Lane - A speed change lane for the purpose of enabling a vehicle entering a roadway to increase its speed to a rate at which it can more safely merge with through traffic.
2. Average daily traffic (ADT) - The term used to describe the number of vehicles on a roadway segment during a non-holiday week day.
3. Bike Lane- A lane devoted to non-motorized bicycles.
4. Center Line - A line indicating the division of the pavement between traffic moving in opposite directions. It is not necessarily at the exact geometric center of the pavement.
5. Control of Access - The condition where the right of owners or occupants of abutting land or other persons to access, light, air or view in connection with a highway is fully or partially controlled by public authority.
6. Deceleration Lane - A speed change lane for the purpose of enabling a vehicle that is to make an exit turn from a roadway to slow to the safe speed on the curve ahead after it has left the main stream of faster-moving traffic.
7. Department of Transportation (TXDOT) - State department of transportation
8. Design Capacity - The maximum number of vehicles that can pass over a given section of a lane or roadway in one direction on multi-lane highway (or in both directions on a two or three lane highway) during a specified time period while operating conditions are maintained corresponding to the selected or specified level of service.
9. Design Speed - A speed selected for purposes of design and correlation of those features of a highway, such as curvature, super-elevation, and sight distance, upon which the safe operation of a vehicle is dependent.
10. Divided Road - A directional roadway on which opposing traffic is separated by a median, either natural or structural.
11. Free-flow Operating Speed - The operating speed of a passenger car over a section of highway during extremely low traffic densities.



-
12. Frontage Road - A road contiguous to and generally paralleling an expressway, freeway, parkway, or through-street and so designed as to intercept, collect, and distribute traffic desiring to cross, enter, or leave such highway and which may furnish access to property that otherwise would be isolated as a result of the controlled-access feature; sometimes called a service road or feeder road.
 13. Geometric Improvements - Improvements to roads such as widening, adding signals to intersections, or adding turning lanes. These are required to mitigate traffic impacts and maintain a required level of service (LOS).
 14. Grade Separation - A structure used to separate vertically two or more intersection roadways, thus permitting traffic on all roads to cross traffic on all other roads without interference.
 15. High Occupant Vehicle (HOV) - Any vehicle carrying two or more passengers. Many larger communities have HOV lanes on major highways, that permit only HOV's to use them.
 16. Institute of Transportation Engineers (ITE) - Organization for professional transportation engineers. ITE publishes the Trip Generation Manual, which provides information on trip generation for land uses and building types. For instance, if an individual needs to know the number of trip ends (see definition below) produced by an industrial park, the report provides a trip rate based upon the size of the building. The report also divides the trip rate into peak hour rates, weekday rates, etc.
 17. Interchange - A system of interconnecting roadways in conjunction with one or more grade separations, providing for the interchange of traffic between two or more roadways or highways on different levels.
 18. Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) - This Congressional act requires states to develop a Statewide Transportation Plan and a Statewide Transportation Improvements Program (STIP) that identifies short-term project needs and priorities. It has also been a major source of funding for transportation planning and encourages the linking of transportation and community planning. (See also TEA-21 below).
 19. Intersection Level of Service - This is a measure of the average delay experienced by each vehicle passing through an intersection. It can be measured for the vehicles making each directional turning movement, using each approach leg, or as a composite average value



for all vehicles using the intersection. Similar to roadway level of service, it is reported with a letter grade designation ranging from A to F. An LOS A represents insignificant delay (less than 10 seconds per vehicle); LOS F represents significant waiting. This means more than 50 seconds per vehicle for intersections with non-existent or inadequate signals or more than 80 seconds per vehicle for intersections with signals.

20. Level of Service (LOS) - A generalized measure of a street's operational characteristics. Six levels, ranging from "A" for light traffic flow "F" for congested traffic flow, are used.
21. Link Volumes- The number of vehicles using a specific street segment. It is typically expressed as average daily traffic (ADT) or vehicle per peak hour (VPH).
22. Linked Trip/Trip Chain- The sequence of grouping stops between the origin and ultimate destination. The intermediate stops made while enroute to the ultimate destination are referred to as passby trips. The term is used in the evaluation of the operation of the accesses or driveways serving the uses at the intermediate stops.
23. MAP 21 – the Federal law building on and modifying previous surface transportation laws; the Intermodal Surface Transportation Efficiency Act (ISTEA), the Transportation Equity Act for the 21st Century (TEA 21), and the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU)
24. Median- A physical divider separating lanes of traffic that typically are traveling in opposite directions. A median is often installed to prohibit unsafe turning movements. It can also be used to beautify a streetscape.
25. MPO- Metropolitan Planning Organization. The agency which administers the federally required transportation planning processes in a metropolitan area. An MPO must be in place in every urbanized area with a population over 50,000, and is responsible for the 20-year long-range plan and the Transportation Improvement Program (TIP). The MPO is the coordinating agency for grants, billings and policy-making for transportation.
26. Modal Split - The proportion of total person-trips that uses each of the various modes of transportation, e.g. automobile, bus, carpool, transit.
27. Mode of Travel - The means of travel, such as auto driver, vehicle passenger, mass transit passenger, or walking.



-
28. Model - A mathematical formula that expresses the actions and interactions of the elements of a system in such a manner that the system may be evaluated under any given set of conditions (e.g. land use, economic, socioeconomic, and travel characteristics).
 29. Multimodal - More than one mode of transportation in the same geographic area.
 30. Network - A system of roadway links and land use activity nodes (e.g. shopping centers, offices) which make up the transportation system; the skeleton of movement.
 31. NHS - National Highway System Network - A system of roadway links and land use activity nodes (e.g. shopping centers, offices) which make up the transportation system; the skeleton of movement.
 32. Operating Speed - The highest overall speed at which a driver can travel on a given highway under favorable weather conditions and under prevailing traffic conditions without at any time exceeding the safe speed as determined by the design speed on a section-by-section basis.
 33. Pavement - That part of a roadway having a constructed surface for the facilitation of vehicular movement.
 34. Peak Hour- The one hour period during which the roadway carries the greatest number of vehicles. Traffic impacts are typically evaluated during the morning and afternoon peak hours when the greatest number of motorists are traveling to and from work.
 35. Pedestrian LOS- Level of service for pedestrians can also be studied as part of a transportation or traffic analysis. This is less common. It is typically only an issue in larger urban areas. Exhibit 1 illustrates the congestion of a proposed pedestrian walkway LOS.
 36. Person Trip - A trip made by a person using any mode for any purpose.
 37. Platoon- A grouping of vehicles traveling in the same direction at the same approximate speed.
 38. Regional Transportation Plan (RTP) - The RTP is created by the Metropolitan Planning Organization (MPO) or the regional planning commission (see above).
 39. Reverse Commute - The travel from the city center to suburban locations, moving counter to the primary or major volume of traffic flow.



-
40. Reversible Lane(s) - A lane(s) where traffic moves in one direction only during some period of time, then in the reverse direction during another period of time.
 41. Right-turn Lane - A traffic lane within the normal surfaced width of a roadway, or an auxiliary lane to the right of and adjacent to the through traffic lanes, reserved for right-turning vehicles at an intersection.
 42. Roadway - That portion of a road which is improved, designed, or ordinarily intended for vehicular use. Roadways are designed and built as divided, undivided, or one-way roads.
 43. Roadway Level of Service - This is a measure of roadway congestion ranging from LOS A--least congested--to LOS F--most congested. LOS is one of the most common terms used to describe how "good" or how "bad" traffic is projected to be. LOS serves as a benchmark to determine whether new development will comply with an existing LOS or if it will exceed the preferred or adopted LOS. As part of planning for new projects or developments, transportation professionals conduct a Traffic Impact Study (TIS). The TIS determines how specific streets and intersections will function with increased traffic volumes either with or without improvements. There are six levels of service letter grades typically recognized by transportation planners and engineers. They are as follows-
 - a. Level of Service A: describes a condition of free flow, with low volumes and high speeds.
 - b. Level of Service B: is the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation.
 - c. Level of Service C: is the zone of mostly stable flow, but speeds and maneuverability are more closely constricted by the higher volumes.
 - d. Level of Service D: is a zone that approaches unstable flow, with tolerable operating speeds, however driving speed is considerably affected by changes in operating conditions.
 - e. Level of Service E: a zone that cannot be described by speed alone. Operating speeds are lower than in Level D, with volume at or near the capacity of the highway.Level of Service F: is a zone in which the operating speeds are controlled by stop-and-go mechanisms, such as traffic lights. This is called forced flow operation. The stoppages disrupt the traffic flow so that the volume carried by the roadway falls below its capacity;



without the stoppages, the volume of traffic on the roadway would be higher, or in other words, it would reach capacity.

It should be noted that LOS is a measure of a roadway segment's (zone's) efficiency at moving automobiles through the zone. By definition, it places a high emphasis on the free-flowing speeds of autos and does not give consideration to the comfort or safety other roadway users such bicyclists or pedestrians.

44. SOV - Single Occupant Vehicle or one person per vehicle.
45. Stacking - The process of vehicles forming a line or queue. If the stacking extends into the through-lanes, delays and unsafe conditions become prevalent.
46. Street Cross-Section- A term used to describe the total number of lanes on a street. For instance, a street that has two lanes of north bound traffic, two lanes of southbound traffic, and a refuge lane is commonly referred to as a five-lane cross-section
47. System Analysis - A method by which the transportation system may be studied to determine its effectiveness in meeting the objective of satisfying travel demand.
48. TAZ- Transportation Analysis Zone. A geographic area that identifies land uses and associated trips that is used for making land use projections and performing traffic modeling.
49. TEA 21- Transportation Equity Act of the 21st Century. TEA 21 was enacted June 9, 1998 as Public Law 105-178. TEA-21 authorizes and funds the Federal surface transportation programs for highways, highway safety, and transit for the 6-year period 1998-2003. The TEA 21 Restoration Act, enacted July 22, 1998, provided technical corrections to the original law. (See also ISTEA above).
50. Traffic Calming- The process of designing streets or adding design elements to tame fast traffic and address unsafe traffic conditions. Design elements include, for example, speed humps, narrowed streets, added traffic circle. Good initial design and street layout can prevent the need to install traffic calming measures after the street is built.
51. Traffic Control Device - Any sign, signal, marking, or device placed or erected for the purpose of regulating, warning, or guiding vehicular traffic and/or pedestrians.



-
52. Traffic Impact Study (TIS) - A study conducted by a transportation professional using transportation modeling and analysis software to predict the volumes and associated impacts from traffic generated by a proposed land use or development project. The study analyzes the impacts to roads and intersections and includes recommendations for roadway improvements that may be needed to mitigate unsafe situations and comply with the regulations of the reviewing jurisdiction.
 53. Traffic Island - An island provided in the roadway to separate or direct streams of traffic, which includes both divisional and channelizing islands.
 54. Traffic Lane - A strip of roadway intended to accommodate a single line of moving vehicles.
 55. Traffic Model - A mathematical equation or graphical technique which is said to be able to simulate travel patterns, particularly those in urban areas.
 56. Traffic Sign - A traffic control device mounted on a fixed or portable support which conveys a specific message by means of words or symbols, and is officially erected for the purpose of regulating, warning, or guiding traffic.
 57. Travel Forecasting - A method used to predict the future travel patterns on particular roadways or between travel modes by using current counts, predictions of intensity and location of land uses, population growth and availability of transit alternatives.
 58. Trip - A one-directional movement which begins at the origin at the start time, ends at the destination at the arrival time, and is conducted for a specific purpose.
 59. Trip Distribution - The process by which the movement of trips between zones is estimated. The data for each distribution may be measured or be estimated by a growth factor process or by synthetic mode.
 60. Trip End - A trip origin or a trip destination.
 61. Trip Generation - The number of vehicular trips caused by or resulting from a particular land use activity.
 62. Turn Lane- A lane devoted to vehicles making a turning movement to go in a different direction. Turn lanes are necessary to ensure the free-flow of traffic in the through lanes by



providing a separate area/lane for turning traffic to slow down and complete the turning maneuver without impeding the through traffic.

63. Undivided Road - A road which has no directional separator, either natural or structural, separating traffic moving in opposite directions.
64. Vehicle - Any component of wheeled traffic. Unless otherwise qualified, the term vehicle will normally apply to free-wheeled vehicles.
65. VMT- Vehicle Miles Traveled. Increases in VMT from existing residents are occurring every year, contributing to added congestion on roadways.
66. VPH- Vehicle per peak hour. This relates to Link Volumes (see above).
67. Volume - The number of vehicles that pass over a given section of a lane or a roadway during a time period of one hour or more. Volume can be expressed in terms of daily traffic or annual traffic, as well as on an hourly basis.
68. Volume-to-Capacity Ratio- Expressed as v/c , this is a measure of traffic demand on a facility (expressed as volume) compared to its traffic-carrying capacity. A v/c ratio of 0.7, for example, indicates that a traffic facility is operating at 70 percent of its capacity. In evaluating the performance of a roadway, v/c ratios should be considered together with the letter grade system, which is more of a qualitative assessment based heavily on speeds and travel time. With traffic moving at an acceptable rate of speed, roadways will perform at favorable Level of Service grades. However, even with an acceptable LOS grade, a v/c ratio may indicate that the same facility is operating at or near full capacity (e.g., 0.95 to 0.99). Conversely, road segments operating at deficient levels of service (e.g., peak-hour LOS E and F) may have an acceptable v/c ratio in cases where the adjoining intersections are not operating efficiently (e.g., cycle lengths on the traffic signals are long or the signal progressions are poor). Consequently, a high v/c ratio does not always imply that a facility has more volume than it can handle nor does a deficient LOS grade necessarily indicate that there is insufficient roadway capacity available.
69. Weaving - The process of exiting a site and merging across multiple lanes "with traffic" to reach an intersection and go in a different direction.



APPENDIX B:

DEMOGRAPHIC PROJECTIONS



Appendix B. Demographic Projections

Table A: County Build-Out Projections: Population (Persons)

County Build-Out Projection: Population		
Year	Population	Compound Annual Growth Rate
2012	808,830	2.230%
2015	864,168	2.230%
2020	964,940	2.237%
2025	1,077,829	2.237%
2030	1,203,925	2.237%
2035	1,344,774	2.237%
2040	1,502,100	2.237%
2045	1,677,832	2.237%
2050	1,874,124	2.237%
2054	2,047,566	2.237%
2055	2,093,379	2.237%
Note: Population Build-Out = 2,088,456		

Table B: County Build-Out Projections: Employment (Jobs within Collin County)

County Build-Out Projection: Employment		
Year	Employment	Compound Annual Growth Rate
2012	325,177	2.626%
2015	351,470	2.626%
2020	400,102	3.074%
2025	465,504	3.074%
2030	541,597	3.074%
2035	630,129	3.074%
2040	733,133	3.074%
2045	852,974	3.074%
2050	992,405	3.074%
2054	1,120,189	3.074%
2055	1,154,628	3.074%
2056	1,190,125	3.074%
Note: Employment Build-Out = 1,168,448		



Table C: City Estimates and Projections: Population (Persons)

Population					
City	2012	2020	2035	CAGR	Ultimate
Allen	78,950	87,506	94,781	0.80%	94,781
Anna	9,228	19,928	48,505	7.48%	146,017
Blue Ridge	4,144	4,849	14,372	5.56%	62,581
Carrollton	<i>Classified Under Plano</i>				
Celina	7,417	15,002	50,954	8.74%	189,199
Dallas	70,085	71,320	74,169	0.25%	74,169
Fairview	8,672	12,010	20,025	3.71%	20,025
Farmersville	6,625	8,660	29,808	6.76%	106,002
Frisco	70,723	105,501	183,592	4.23%	183,592
Garland	<i>Classified Under Richardson</i>				
Josephine	754	1,584	3,169	6.44%	6,338
Lavon	2,224	5,179	10,357	6.92%	20,715
Lowry Crossing	2,984	4,663	13,955	6.94%	23,146
Lucas	6,130	6,494	10,219	2.25%	13,406
McKinney	133,055	180,175	244,530	2.68%	350,279
Melissa	6,090	8,752	26,009	6.52%	71,793
Murphy	14,952	17,014	18,072	0.83%	18,072
Nevada	2,946	3,625	6,567	3.55%	11,770
New Hope	<i>Classified Under McKinney</i>				
Parker	6,604	7,316	12,417	2.78%	12,417
Plano	271,970	278,029	284,656	0.20%	284,656
Princeton	12,511	15,189	40,164	5.20%	78,304
Prosper	10,515	20,004	32,031	4.96%	35,058
Richardson	33,765	35,700	41,761	0.93%	45,151
Rockwall	656	1,133	2,834	6.57%	5,667
Royse City	2,060	2,735	10,226	7.22%	40,906
Sachse	4,477	5,110	6,227	1.44%	7,122
Saint Paul	1,856	1,965	2,400	1.12%	2,666
Van Alstyne	<i>Classified Under Anna</i>				
Weston	1,285	3,370	9,053	8.86%	127,026
Wylie	38,153	42,126	53,919	1.52%	57,599
Totals	808,830	964,940	1,344,774	2.24%	2,088,456
Compound Annual Growth Rates	Years 2012-2020			2.230%	
	Years 2020-2035			2.237%	



Table D: City Estimates and Projections: Employment (Jobs within Collin County)

Employment					
City	2012	2020	2035	CAGR	Ultimate
Allen	21,076	27,320	47,171	3.56%	62,142
Anna	1,731	3,275	12,914	9.13%	48,899
Blue Ridge	1,274	1,444	3,263	4.17%	9,385
Carrollton	<i>Classified Under Plano</i>				
Celina	2,159	4,221	12,900	8.08%	136,411
Dallas	16,290	18,073	19,216	0.72%	19,216
Fairview	1,574	3,003	13,820	9.91%	13,820
Farmersville	2,772	3,092	9,225	5.37%	34,250
Frisco	33,488	51,576	92,322	4.51%	132,284
Garland	<i>Classified Under Richardson</i>				
Josephine	149	209	350	3.78%	450
Lavon	353	552	995	4.61%	2,270
Lowry Crossing	346	624	2,049	8.04%	4,031
Lucas	604	842	1,731	4.68%	2,605
McKinney	43,105	58,905	98,748	3.67%	246,487
Melissa	1,438	2,570	14,639	10.62%	28,284
Murphy	1,623	2,249	3,231	3.04%	3,231
Nevada	609	765	1,242	3.15%	1,888
New Hope	<i>Classified Under McKinney</i>				
Parker	499	513	561	0.51%	1,432
Plano	160,916	176,819	212,429	1.21%	230,533
Princeton	2,924	3,554	9,378	5.20%	19,570
Prosper	1,262	2,948	10,222	9.52%	34,996
Richardson	20,953	24,698	33,770	2.10%	39,362
Rockwall	89	89	89	0.00%	89
Royse City	416	472	2,672	8.42%	10,316
Sachse	1,395	2,022	4,732	5.45%	5,547
Saint Paul	113	113	113	0.00%	113
Van Alstyne	<i>Classified Under Anna</i>				
Weston	287	435	6,794	14.75%	64,366
Wylie	7,732	9,718	15,554	3.09%	16,468
Totals	325,177	400,102	630,129	2.92%	1,168,448
Compound Annual Growth Rates	Years 2012-2020			2.626%	
	Years 2020-2035			3.074%	



APPENDIX C:

COLLIN COUNTY 2020 DRAFT FISCALLY-CONSTRAINED TRANSPORTATION AND TRANS-IT PLAN



Appendix C. Fiscally-Constrained Plan

Collin County 2020 Draft Fiscally-Constrained Transportation Plan

Summary

- The 2020 Funding Plan is fiscally constrained with no funding and financing gap. Total sources of funds are estimated to be \$928 million against \$928 million for an estimated 47 transportation improvement projects in Collin County.
- None of the projects examined are expected to generate sufficient revenues from tolls or other revenue sources to be financially feasible without significant public financial support. As a result, none of the projects evaluated were considered to be candidates for attracting private capital.
- Arterial and street projects that are not developed using Federal and State funding allocations would be financed through a General Obligation (G.O.) bond issued by Collin County. In accordance with Collin County policy, the County would finance 100% of project costs for roads that are outside a city's jurisdiction but within the county and 50% of costs for roads that are within a given city's jurisdiction.
- For the arterial and street improvements located within their respective jurisdictions, cities could use a variety of funding sources depending on availability. These include, but are not limited to, bonds, general fund, and other financial resources.
- TxDOT would provide 100% of the funds needed for two separate improvements to US 75, which include the widening of US 75 from 4 to 6 lanes between the Collin County Loop and SH 121 (N) and between Throckmorton Road and FM 455.
- Collin County would provide 100% of the funding needed for the widening of the Dallas North Tollway (DNT) frontage road from US380 to FM 428. This would be financed through the issuance of a G.O. bond.



Table E: Sources of Funds, 2017 to 2020

Sources	2017	2018	2019	2020 and Beyond	Total
State Funds/Bonds				76,400,000	76,400,000
Federal					
Category 5: CMAQ	3,200,000	3,200,000	3,200,000	3,200,000	12,800,000
Category 6: Bridges	5,400,000	5,400,000	5,400,000	5,400,000	21,600,000
Category 7: STP-MM	13,400,000	13,400,000	13,400,000	13,400,000	53,600,000
Category 8: Safety	4,200,000	4,200,000	4,200,000	4,200,000	16,800,000
Subtotal Federal	26,200,000	26,200,000	26,200,000	26,200,000	104,800,000
Collin County and Cities					
Arterials and Streets	-	-	-	290,700,000	290,700,000
DNT Frontage Road	-	-	-	38,300,000	38,300,000
Subtotal Collin County and Cities	-	-	-	329,000,000	329,000,000
Subtotal With Federal Funds	26,200,000	26,200,000	26,200,000	431,600,000	510,200,000
NTTA				417,800,000	417,800,000
Total Sources	26,200,000	26,200,000	26,200,000	849,400,000	928,000,000
Total Uses					(928,000,000)
Funding and Financing Gap					-

Sources of Funds Assumptions

Detailed financial plans for the Dallas North Tollway (DNT), the President George Bush Turnpike (PGBT), and the Sam Rayburn Tollway (SRT) projects in Collin County were not available. NTTA has stated that it would have the necessary funding available for 4 (out of 5) of the proposed improvements to the DNT, both of the proposed SRT projects, and the widening of the PGBT from the Denton County Line to the Dallas County Line. Except for the DNT frontage road improvements from US 380 to FM 428, it was assumed that the NTTA would develop these projects using its system financing and/or bond financing without any additional financial support from Collin County. Project completion dates are contingent on funding availability.

Federal and State funding estimates are based on planned funding for FY14-16 extrapolated to 2017-20. Funding from gas tax revenues and traditional sources is estimated to be approximately \$26.3 million per year during this period. Historically, the amount that the county has received from TxDOT’s funding categories 5 through 8 have varied significantly from year-to-year. From 2017 to 2020, total federal funding is estimated to be \$104.8 million. The final amount to be appropriated is subject to



availability and changes in law. Funding amounts could change depending on future Federal transportation legislation.

The estimated total cost of the proposed arterial and street projects is \$395.5 million. The total amount provided from cities located within the County is estimated to be \$136.6 million. Another \$104.8 million would be provided through Federal programs. Collin County would issue a G.O. bond for the estimated \$154 million in arterial and street projects that cannot be developed through Federal, State, NTTA, and local financial resources. The \$38.3 million DNT frontage road improvements would also be included in the estimated \$192.3 million bond. The issuance of the G.O. bond will likely require voter approval. The bond amount does not include issuance costs, which typically range from 2% to 5% of the total amount issued.

Although previous County bond programs have included funding to augment State funding in order to give certain projects greater priority, it is assumed that TxDOT will completely cover the costs of the US 75 improvements. TxDOT funding for the US 75 improvements could potentially come from the 2015 bond program that requires voter approval in November 2014, a future bond issue, or other state resources.

Approximately \$3.8 million could be also available from joint TIRZs in which Collin County has entered into with Allen, Lavon, McKinney, and Melissa with a 50% participation rate. Because these agreements typically require generated funds to be used within the TIRZ boundaries, TIRZ funds have not been in the 2020 financial plan.

Table E provides a summary of the amount of funds that would be needed by Collin County and the cities for each proposed arterial and street project. The \$192.3 million bond issued by Collin County in **Table E** is net of Federal and State funding, but does include the \$38.3 million in frontage road improvements on the DNT.



Table F: Funding Requirements for Street and Arterial Projects, 2020

Project	Total
5th St/Parkwood Blvd	9,700,000
5th St/Parkwood Blvd	3,800,000
Alma Rd	6,500,000
Alma Rd	5,100,000
Bethany Dr/Lucas Rd/FM 1378	30,500,000
Coit Rd	10,700,000
Coit Rd.	10,700,000
Coit Rd.	8,700,000
Cotton Gin Road	3,200,000
Chelsea Blvd/Hardin Rd	6,000,000
FM 2478/Custer Rd	12,700,000
FM 2514/Parker Rd	9,200,000
FM 2514/Parker Rd	10,700,000
FM 2514/Parker Rd	11,200,000
FM 2551/Murphy Rd.	29,100,000
FM 455	3,100,000
FM 455	1,800,000
FM 546	6,600,000
FM 982	22,700,000
Independence Pkwy	15,900,000
Lake Forest Dr	4,700,000
Park Blvd	5,600,000
Ridgeview Dr	17,600,000
SH 121	18,300,000
SH 121	24,200,000
SH 205	12,900,000
SH 5/Greenville Ave	5,100,000
SH 5/Greenville Ave	860,000
SH 5/Greenville Ave	10,880,000
SH 5	2,370,000
SH 5	6,570,000
SH 78	28,000,000
Shiloh Rd	8,800,000
Stonebrook Pkwy	9,400,000
Woodbridge Pkwy	4,500,000
Windhaven Pkwy	4,700,000
US 380	13,100,000
Arterials and Streets	395,500,000



Uses of Funds Assumptions

Table G provides a general summary of the transportation projects that would be needed to reduce congestion beginning in 2020. The projects are also shown in **Figure A**. This table includes the NTTA and non-NTTA projects that will be developed by 2020 or shortly thereafter. Although NTTA has indicated that the Sam Rayburn Tollway (SRT) from the DNT to US 75 will be developed by 2022, this project has been included since the expected completion date is reasonably close to 2020 and there is a demonstrated need.

Table G: Summary Uses of Funds, 2020 Mobility Plan

Uses	
US 75	76,400,000
Arterials and Streets	395,500,000
DNT Frontage Road	38,300,000
Subtotal	510,200,000
NTTA	
DNT	112,300,000
PGBT	146,900,000
SRT	158,600,000
Subtotal NTTA	417,800,000
Total	928,000,000

Cost estimates were based on benchmarks provided by NCTCOG of \$1.25 million/lane mile for arterials & street projects and \$4.0 million/lane mile for highway improvements. These benchmarks were inflated to 2020 dollars using a 2.5% annual inflation rate and were calculated to be \$1.5 million/lane mile for arterial & street improvements and \$4.6 million/lane mile for highway projects. Project cost estimates include right of way and a 30% contingency.

Cost data for DNT, PGBT, and SRT projects in Collin County were not available. An estimate of costs was developed using the per lane mile highway benchmark of \$4.6 million (2020\$).

Provided that all environmental and 3rd party approvals are received, construction for selected arterial and street projects could begin as early as 2017. These projects would be developed using traditional funding sources, e.g. TxDOT categories 5 through 8, and later supplemented by the proposed bond issue and funding from the cities.

Transit projects have not been included in the detailed project list, but can be added to this list depending on project need.

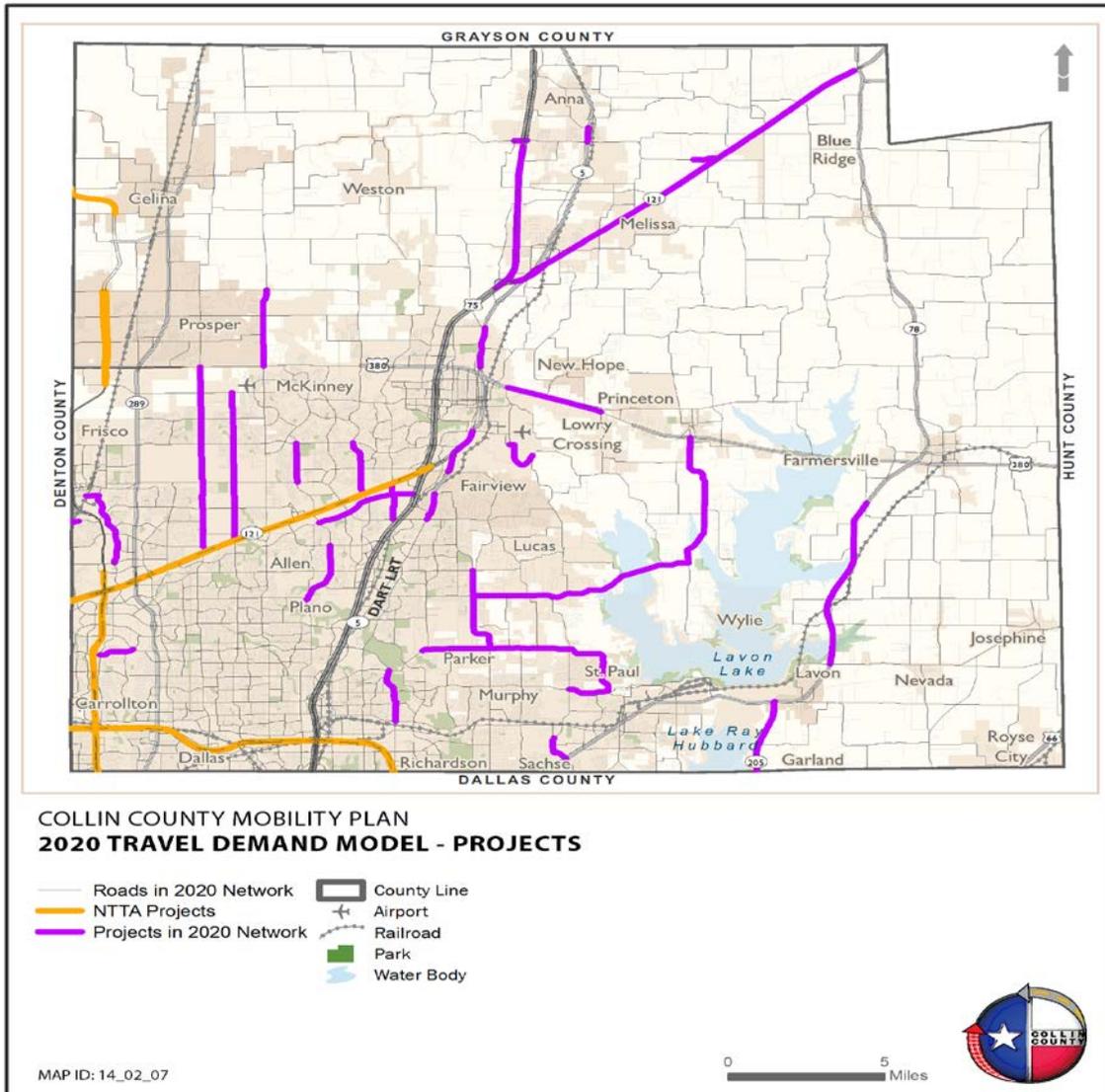


Figure A: Projects included in the Fiscally-Constrained Plan.

Table H lists the TxDOT and NTTA highway projects, major and minor arterial and street projects that have been determined to be needed based on the results of Jacobs’ traffic model. This model used inputs provided by North Central Texas Council of Governments (NCTCOG) as well as forecasts of population growth, traffic growth, level of service, and congestion patterns. While some of these projects are included in NCTCOG’s plan, others have been added as a result of this analysis.



Table H: Detailed Uses of Funds, 2020 Mobility Plan

Project	From	To	Improvement	Lane Miles	Arterial Cost	Freeway Cost	ROW	Contingency	Total	NTTA Y/N	Responsible Entity
					1,500,000	4,600,000	10%	30%			
NTTA											
Dallas North Tollway Frontage Rd	US 380	FM 428	Widen 2 lane road to 4 lanes frontage road	5.94		27,324,000	2,732,400	8,197,200	38,300,000	N	Collin County
Dallas North Tollway	Dallas Co Line	SH 121	Widen Mainline from 6 to 8 lanes	14.50		66,700,000	6,670,000	20,010,000	93,400,000	Y	NTTA
Dallas North Tollway Frontage Rd	Warren Pkwy	SH 121	Widen 2 lanes to 3 lanes	0.44		2,100,000	210,000	630,000	3,000,000	Y	NTTA
Dallas North Tollway	Windhaven	Spring Creek Pkwy	add NB entrance and SB exit ramps	0.44		2,100,000	210,000	630,000	3,000,000	Y	NTTA
Dallas North Tollway	FM 428	Denton Co Line	New 2 lane frontage road	1.99		9,200,000	920,000	2,760,000	12,900,000	Y	NTTA
President George Bush Turnpike	Denton Co Line	Dallas Co Line	Widen Mainline from 6 to 8 lanes	22.80		104,900,000	10,490,000	31,470,000	146,900,000	Y	NTTA
Sam Rayburn Tollway	Denton Co Line	Dallas North Tollway	Widen Mainline from 6 to 8 lanes	2.20		10,200,000	1,020,000	3,060,000	14,300,000	Y	NTTA
Sam Rayburn Tollway	Dallas North Tollway	US 75	Widen Mainline from 6 to 8 lanes	22.40		103,040,000	10,304,000	30,912,000	144,300,000	Y	NTTA
NTTA Subtotal						325,600,000	32,556,400	97,669,200	456,100,000		
Project	From	To	Improvement	Lane Miles	Arterial Cost	Freeway Cost	ROW	Contingency	Total	City Y/N	Responsible Entity
					-	4,600,000	10%	30%			
Collin County											
US 75	Collin County Loop	SH 121 (N)	Widen Mainline from 4 to 6 lanes	7.80		35,900,000	3,600,000	10,800,000	50,300,000	N	TxDOT
US 75	Throckmorton Rd	FM 455	Widen mainline 4 lanes to 6 lanes	4.05		18,600,000	1,900,000	5,600,000	26,100,000	N	TxDOT
5th St/Parkwood Blvd	Stonebook Pkwy	Warren Pkwy	Widen 4 lanes to 6 lanes	4.58	6,900,000		700,000	2,100,000	9,700,000	Y	Frisco
5th St/Parkwood Blvd	Main St	Stonebook Pkwy	Widen 2 lanes to 4 lanes	1.78	2,700,000		300,000	800,000	3,800,000	Y	Frisco
Alma Rd	Stacy Rd	Eldorado Pkwy	Widen 4 lanes to 6 lanes	3.04	4,600,000		500,000	1,400,000	6,500,000	Y	Allen
Alma Rd	Hedgcoxe Rd	Exchange Pkwy	Widen 4 lanes to 6 lanes	2.43	3,600,000		400,000	1,100,000	5,100,000	Y	Allen
Bethany Dr/Lucas Rd/FM 1378	FM 982	FM 2551	Widen 2 lanes to 4 lanes (partially unfunded)	14.50	21,800,000		2,200,000	6,500,000	30,500,000	Y	Multi-juris./City
Coit Rd	Lebanon Rd	Main St/FM 3537	Widen 4 lanes to 6 lanes	5.08	7,600,000		800,000	2,300,000	10,700,000	Y	Frisco
Coit Rd.	FM 3537/Main St.	Panther Creek Pkwy	Widen 4 lanes to 6 lanes	5.04	7,600,000		800,000	2,300,000	10,700,000	Y	Frisco
Coit Rd.	Panther Creek Pkwy	US 380	Widen 4 lanes to 6 lanes	4.10	6,200,000		600,000	1,900,000	8,700,000	Y	Frisco
Cotton Gin Road	Library St	S 5th St	New 4 lanes	1.56	2,300,000		200,000	700,000	3,200,000	Y	Frisco
Chelsea Blvd/Hardin Rd	Stacy Rd	SH 121	Widen 2 lanes to 4 lanes	2.88	4,300,000		400,000	1,300,000	6,000,000	Y	Allen
FM 2478/Custer Rd	US 380	FM 1461	Widen 2 lanes to 4 lanes	6.06	9,100,000		900,000	2,700,000	12,700,000	Y	McKinney
FM 2514/Parker Rd	Springhill Estates	FM 2551	Widen 4 lanes to 6 lanes	4.30	6,500,000		700,000	2,000,000	9,200,000	Y	Parker
FM 2514/Parker Rd	FM 2551	FM 1378	Widen 4 lanes to 6 lanes	5.06	7,600,000		800,000	2,300,000	10,700,000	Y	Parker
FM 2514/Parker Rd	FM 1378	Park Blvd	Widen 2 lanes to 4 lanes	5.36	8,000,000		800,000	2,400,000	11,200,000	Y	Saint Paul
FM 2551/Murphy Rd.	FM 2514/Parker Rd	FM 2170	Widen 2 lanes to 6 lanes	13.84	20,800,000		2,100,000	6,200,000	29,100,000	Y	Allen
FM 455	Wild Rose	SH 121	Widen and realign 2 lanes to 4 lanes	1.46	2,200,000		200,000	700,000	3,100,000	N	Collin County
FM 455	US 75	CR 286	Widen 2 lanes to 4 lanes	0.84	1,300,000		100,000	400,000	1,800,000	Y	Anna
FM 546	CR 317	SH 5	Widen 2 lanes to 4 lanes (unfunded from CR 317 to Airport Rd)	3.14	4,700,000		500,000	1,400,000	6,600,000	Y	McKinney
FM 982	FM 546	US 380	Widen 2 lanes to 4 lanes	10.82	16,200,000		1,600,000	4,900,000	22,700,000	N	Collin County
Independence Pkwy	SH 121	Virginia Pkwy	Widen to 6 lanes (SH 121 to Eldorado Pkwy)	7.58	11,400,000		1,100,000	3,400,000	15,900,000	Y	Frisco
Lake Forest Dr	SH 121	Eldorado Pkwy	Widen 4 lanes to 6 lanes	2.26	3,400,000		300,000	1,000,000	4,700,000	Y	McKinney
Park Blvd	FM 1378	FM 2514	Widen 2 lanes to 4 lanes	2.64	4,000,000		400,000	1,200,000	5,600,000	Y	Wylie
Ridgeview Dr	Alma Rd	US 75	Widen 2 lanes to 4 lanes and new 4 lanes	8.32	12,500,000		1,300,000	3,800,000	17,600,000	Y	Allen
SH 121	US 75	FM 545 (Melissa road)	Widen 2 and 4 lanes to 6 lanes (unfunded for 6 lanes)	8.74	13,100,000		1,300,000	3,900,000	18,300,000	N	Collin County
SH 121	FM 545 (Melissa Road)	SH 160	Widen 2 lanes to 4 lanes (unfunded from FM 455 to SH 160)	11.52	17,300,000		1,700,000	5,200,000	24,200,000	N	Collin County
SH 205	SH 78	Collin County Line	Widen 2 lanes to 4 lanes	6.16	9,200,000		900,000	2,800,000	12,900,000	N	Collin County
SH 5/Greenville Ave	Spur 399	FM 546/Industrial Blvd	Widen 4 lanes to 6 lanes	2.42	3,600,000		400,000	1,100,000	5,100,000	Y	McKinney
SH 5/Greenville Ave	Fairview Ave (S)	Stacy Road	Widen 2 to 4 lanes	0.38	600,000		60,000	200,000	860,000	Y	Fairview
SH 5/Greenville Ave	SH 121	Fairview Ave (S)	Widen 2 to 4 lanes	5.22	7,800,000		780,000	2,300,000	10,880,000	Y	Fairview
SH 5	FM 455	CR 369	Widen lanes to 6 lanes	1.14	1,700,000		170,000	500,000	2,370,000	Y	Anna
SH 5	Tennessee St.	FM 543	Widen 2 to 4 lanes	3.14	4,700,000		470,000	1,400,000	6,570,000	Y	McKinney
SH 78	FM 6	CR 557	Widen 2 to 4 lanes	13.30	20,000,000		2,000,000	6,000,000	28,000,000	N	Collin County
Shiloh Rd	Parker Rd	14th St	Widen 4 lanes to 6 lanes	4.20	6,300,000		630,000	1,900,000	8,800,000	Y	Plano
Stonebrook Pkwy	Legacy Dr	Longhorn Trail	New 6 lanes divided	4.44	6,700,000		700,000	2,000,000	9,400,000	Y	Frisco
Woodbridge Pkwy	Hooper Rd	SH 78	Widen 2 lanes to 4 lanes and new 4 lanes	2.12	3,200,000		300,000	1,000,000	4,500,000	Y	Sachse
Windhaven Pkwy	Parkwood Blvd	Spring Creek Pkwy	Widen 4 lanes to 6 lanes	2.26	3,400,000		300,000	1,000,000	4,700,000	Y	Plano
US 380	Airport Dr	Bridgefrommer Rd	Widen 4 to 6 lanes	6.24	9,400,000		900,000	2,800,000	13,100,000	N	Collin County
Arterials and Streets				187.95	282,300,000	-	28,310,000	84,900,000	395,500,000		
US 75				7.80		35,900,000	3,600,000	10,800,000	76,400,000		
Non-NTTA Projects				195.75	282,300,000	35,900,000	31,910,000	95,700,000	471,900,000		
Total									928,000,000		



APPENDIX D: SUMMARY OF MEETINGS

Appendix D: Summary of Meetings



Community Workshops Summary Report

Collin County Mobility Plan – 2013 Update

Prepared for Collin County

Collin County, Texas
February 2013

Jacobs Engineering Group Inc.
Co-PLAN, LLC
Strategic Community Solutions, LLC
Freese and Nichols, Inc.
Alliance Transportation Group, Inc.

Table of Contents

<u>Section</u>	<u>Page</u>
1.0 Executive Summary	4
2.0 Introduction	4
2.1. Workshop Purpose and Overview	5
2.2. Outreach Methods	6
2.3. Attendance	7
3.0 Workshop Format	7
4.0 Online Input Opportunities	9
5.0 Characteristics of Participants	9
5.1. Age of Participants	10
5.2. Tenure in Collin County (Home and Work)	10
5.3. Participants' Household Characteristics	12
6.0 Public Input highlights	14
6.1. Current Transportation Conditions	14
6.2. Desired Mobility Improvements	16
6.3. Benefits From Investments	17
6.4. Design of Improvements	18
6.5. Next Steps	19

List of Exhibits

Exhibit 1: Workshop Attendance	7
Exhibit 2: Online Participants' Other Involvement In Update Process	9
Exhibit 3: Age of Participants	10
Exhibit 4: Length of Residence in Collin County	11
Exhibit 5: Status of Work in Collin County	12
Exhibit 6: Participants' Household Characteristics	13
Exhibit 7: Car Ownership	13
Exhibit 8: Biggest Problems from Congestion	14
Exhibit 9: Worst Congestion	15
Exhibit 10: Mix of Travel Options	15
Exhibit 11: Quality of Life Improvements	16
Exhibit 12: Economic Improvements	16
Exhibit 13: Improvements for Desired Development	16
Exhibit 14: Benefits Desired From Mobility Improvements	18
Exhibit 15: Desired Design Features	19

List of Appendices

Appendix A – Methods of Meeting Advertisement

Appendix B – Sign-In Sheets

Appendix C – Workshop Handouts, Exhibits and Slide Presentations

Appendix D – Reports from Small Groups - Flipcharts

Appendix E – Photos

Appendix F – Written Public Comments and Meeting Evaluation Forms

Appendix G – Results of Keypad Polling and Online Survey

1.0 EXECUTIVE SUMMARY

A more extensive public participation process was included in this Mobility Plan update than in past efforts. Any interested individual or stakeholder could provide comments through a variety of means.

Participants are concerned about congestion because it takes time that could otherwise be spent with family and friends. The worst traffic congestion, according to participants, is on U.S. 75. A significant share of participants do not believe that the current mix of travel choices provides them what they need; they want more extensive public transportation services and better bicycle and pedestrian facilities.



Community Workshop in Plano, TX

While participants continue to place the highest emphasis on improvements that reduce peak hour congestion, other issues are also very important to them. Supporting the vitality of existing communities is the second-most important benefit they want to see from mobility investments, and providing transportation facilities and choices for businesses is the third-most important benefit. As this process continues, it will evaluate transportation improvements in terms of these benefits as well as the more-traditional analysis of traffic volumes and congestion.

As these new transportation facilities are built, their design should be compatible with the areas and uses around them; they should provide safety to all users; and they should be designed in a way that minimizes life-cycle costs, not just initial construction cost.

2.0 INTRODUCTION

Collin County is in the process of updating the Mobility Plan. About every five years, the county reviews the changing transportation needs of residents and businesses. The update started in 2012 and it will take more than a year to identify and coordinate transportation needs of the growing population, and serve as a guide for future investments in transportation facilities and services in Collin County.

This process has four stages:

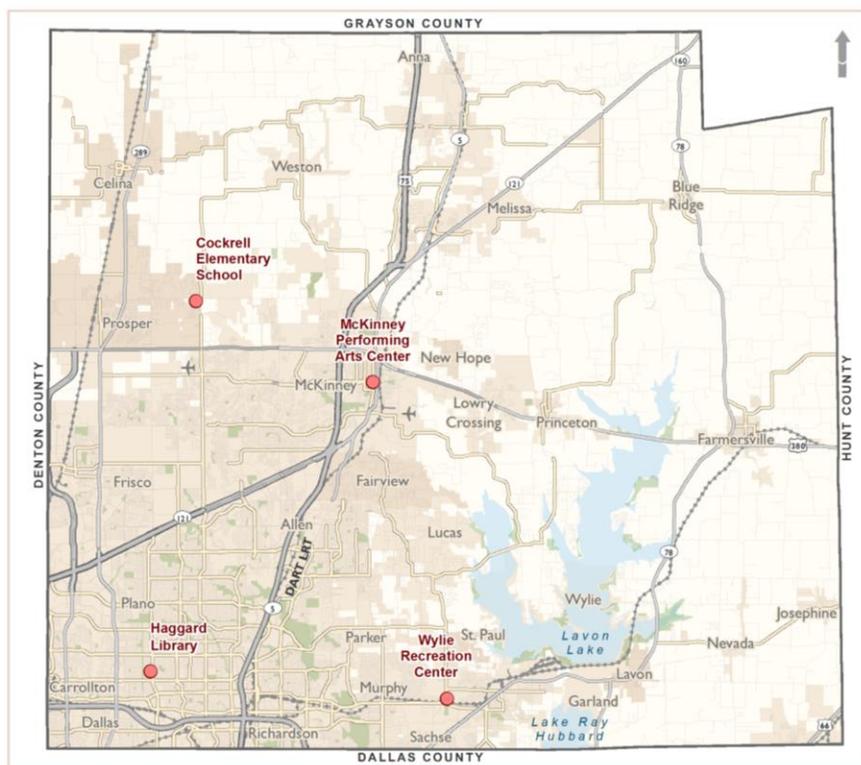
- Review the results of the county's 2007 Mobility Update;
- Analyze the county's current and projected population and employment growth;
- Identify specific multi-modal transportation improvements that will serve the needs of county residents, both short- and long-term; and

- Determine which improvements can be funded within the bounds of current and projected financial resources available to the county.

This update is a team effort involving the Collin County Commissioners Court, Planning Board, and Engineering Department; 31 local governments; DART; the Texas Department of Transportation (TxDOT); the North Texas Tollway Authority (NTTA) and the North Central Texas Council of Governments (NCTCOG). Comments and recommendations are also welcome from anyone who uses Collin County's roads, bridges, transit, bike paths and walkways, or whose investment choices are affected by mobility in the county.

Collin County conducted a public outreach effort in early 2013 so interested individuals and organizations could provide input using the communications approach they preferred.

As part of that outreach effort, four community workshops were held in February 2013 to help define goals and objectives for transportation planning and provide an opportunity for interested parties to review the most recent demographic and land use forecasts. Workshops were held in Plano (Haggard Library), Wylie (Wylie Recreation Center), Prosper (Cockrell Elementary School) and McKinney (McKinney Performing Arts Center) from 6:30 pm to 8:30 pm.



Community Workshop Locations within Collin County

In addition to the workshops, interested individuals were able to provide comments by mail and email; an online survey provided another way for people to contribute their ideas for consideration during this process.

2.1. Workshop Purpose and Overview

The purpose of these workshops was to provide opportunities for Collin County stakeholders to share their ideas about the County's mobility system and needs. The workshops were designed to:

- Present information about Collin County's growth, its past mobility plans and its current transportation characteristics;

- Give participants an opportunity to ask questions about this information;
- Engage participants in discussion with one another; and
- Gain input from participants about all mobility issues using a variety of techniques.

2.2. Outreach Methods

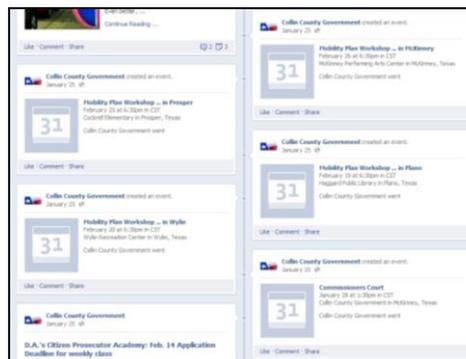
To ensure a wider audience was informed of the meeting, phone calls were made and emails (with workshop flyer attached) were sent to 40 cities, municipal utility districts, and special utility districts within Collin County. In addition, emails were sent to community organizations active in Collin County including: the Richardson Historical Society, Arts Center of North Texas (formerly Arts of Collin County), Bike Friendly Richardson, Bike DFW, Collin County Community College District, Collin County Historical Commission, Connemara Conservancy, Dallas Chinese News, Dallas Off Road Bicycle Association, DART, Denton County Transportation Authority, Fort Worth Transportation Authority, Greater Dallas Planning Council, North Texas Commission, North Texas Tollway Authority, North Texas Council of Governments, Plano Bicycle Association, Richardson Chamber of Commerce, Richardson ISD and Texas Trails Network. All emails and phone calls encouraged these organizations to distribute the workshop announcement through their own communication networks.

Announcements were made on the Collin County Facebook (www.facebook.com/CollinGovt) and Twitter (<https://twitter.com/collincountygov>) pages and on the Collin County home page located at www.co.collin.tx.us/.

Collin County managed the pre-, during and post-event media relations for the Community Workshops. A press release and request for media coverage was sent to 80 media outlets



Workshop Flyer



Facebook and Twitter Announcements



Community Workshop in Wylie, TX

including weekly newspapers, social publications, Associated Press, television, and AM/FM radio, state representatives and local representatives on February 13, 2013.

Detailed information on the methods of meeting advertisement is included in **Appendix A**.

2.3. Attendance

There were a combined total of 78 people who signed in for the Community Workshops. **Exhibit 1** below separates the attendance by workshop location. The sign-in sheets are located in **Appendix B**.

Workshop	Attendance
February 19, 2013 - Plano	19
February 20, 2013 - Wylie	21
February 25, 2013 - Prosper	12
February 26, 2013 - McKinney	26
Total	78

Exhibit 1: Workshop Attendance



**Community Workshop in McKinney, TX
Collin County Commissioner Matt Shaheen**

3.0 WORKSHOP FORMAT

The same agenda was used for each of the four workshops. The workshops began with a welcome from a County Commissioner or leader in the community where the workshop was held. A presentation by the Jacobs consultant team provided background information on the Mobility Plan, the update process, transportation issues and projected population and employment growth in the county. The handouts, exhibits and slide presentation are located in **Appendix C**. Workshop photos can be found in **Appendix E**.



**Community Workshop in Wylie, TX
Collin County Commissioner Cheryl Williams**

After the presentation, participants met in small groups to consider questions about their desired mobility improvements. The questions were:

- Based on your group members' experience, where are the top five biggest congestion problems in Collin County today?
- What three mobility improvements would do the most to improve your



Community Workshop in Prosper, TX

day-to-day quality of life? Mobility improvements might include changes to freeways, arterial streets, local roads, public transportation, sidewalks, bikeways or the operation of these facilities.

- What three mobility improvements would do the most to support the economy of Collin County?
- What three mobility improvements would encourage the pattern of growth and development that you'd like to see in Collin County over the next 20 to 25 years?

Each group was asked to reach agreement on its response to these questions. In the third segment of the workshop, all groups shared their work with one another. Discussion about these results identified common themes and priorities. These were captured on flip charts which are located in **Appendix D**.



Community Workshop in Plano, TX

Finally, electronic keypads were used to obtain anonymous input from all workshop participants. A series of questions was displayed on a large screen in the front of the meeting room. Each participant, equipped with a handheld wireless keypad, responded to these questions based on his or her own knowledge and opinions. Responses were automatically and instantly tallied and the results were displayed on the screen. The instant results of the keypad polling provided immediate feedback to participants about the opinions of the entire group.



Electronic Keypad

The keypad polling technique encourages greater participation and more effective communication because everyone is heard equally. The voting is anonymous, which allows the participants to

respond based on their individual

preferences, which might vary from the overall consensus recorded during the small group discussions. Also, the anonymity allows participants to voice their true opinions without the influence of the other participants.

After the keypad polling, a County representative wrapped up the meeting by thanking participants for their comments and suggestions. Participants were encouraged to continue their involvement by taking the

Comment Card
Collin County Mobility Plan - 2013 Update
Date of Comment: _____

Your comments will help shape a Mobility Plan that meets the needs of people in Collin County. Please use this form to provide comments, suggestions and concerns about mobility in the County today and in the future.

Please provide your contact information if you'd like to receive information about the Mobility Plan Update as the project continues.

Name: _____

Company/Organization (if any): _____

Address: _____ City, State, Zip: _____

Email: _____

All written comments must be received or postmarked by Tuesday, March 26, 2013, to be part of the official record for the initial phase of public involvement and to be considered by the Mobility Plan Team. Written comments can be e-mailed to mobility@collincountytx.gov, submitted through the website at www.collincountytx.us/eng/transportability, or mailed to Mobility Plan Team, c/o Collin County - Engineering Department, 825 N. McDonald Street, Suite 160, McKinney, TX 75069.

 For more information, please visit: www.collincountytx.us/eng/transportability

Comment Card

online survey and attending later meetings. They were asked to invite friends, neighbors and colleagues to participate as well.

Two other options for input were available to workshop participants. A written comment form was available for anyone who wanted to provide a more detailed comment or a suggestion about a specific road, intersection or mobility concern. Also, County staff and consultant team members spent time before and after each workshop talking to individual participants about their questions, concerns and suggestions.

4.0 ONLINE INPUT OPPORTUNITIES

As described previously, any interested person was able to provide comments electronically about the Mobility Plan update. Nearly 50 people provided comments through the online survey and another 10 sent email comments.

Exhibit 2 shows that more than half of the people who provided comments through the online survey had not participated in a community workshop. This shows that the online participants were a different set of interested stakeholders than workshop participants.

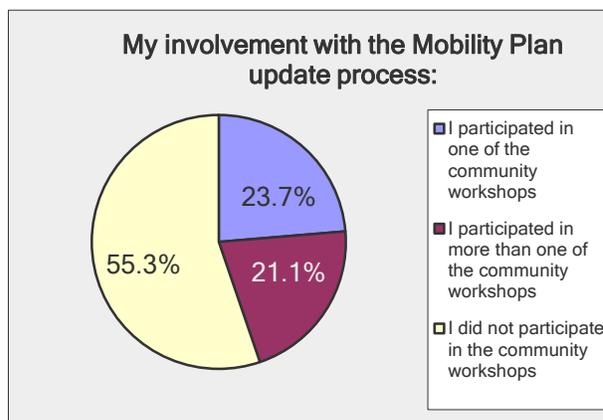


Exhibit 2: Online Participants' Other Involvement In Update Process

While information on the Mobility Plan update was circulated through the Collin County Facebook and Twitter accounts, no substantive comments were received through these means.

5.0 CHARACTERISTICS OF PARTICIPANTS

Anyone who participates in the public involvement activities for a planning project chooses to do so. This self-selection means that the person is interested in the issues addressed by the project (mobility, in this case), cares about the future of the community that is the project focus (Collin County, for this project) or has a particular interest or stake in the project's outcome. Since participants choose to be involved for these reasons, they are unlikely to reflect the balance of perspectives and opinions held by a random selection of community residents. Their input should not be viewed as a statistically-



Community Workshop in McKinney, TX

representative sample of resident opinions. Rather, it should be understood as the input of people who are more interested and involved – and usually better informed – about the choices facing Collin County in terms of its future mobility. This more knowledgeable perspective is important for the consultant team and the County to understand because it reflects on-the-ground experience with the transportation system. Also, these concerns are the ones that are most likely to be heard at the public hearings when decisions are made at the end of this process, so it’s valuable to understand and address these concerns during the analysis phase of work.

At each workshop, a few keypad polling questions asked participants about their backgrounds. These questions were also included in the online survey. Answers to these questions help us to understand the perspectives and backgrounds of the people who chose to be involved in this process. As expected, participants do not provide a representative sample of all County residents. Rather, they reflect the perspectives of informed and active community stakeholders and leaders.

Key characteristics of participants are described below.

5.1. Age of Participants

All participants were between the ages of 21 and 79. As **Exhibit 3** shows, workshop participants were evenly divided between those in their 40s and 50s and those in their 60s and 70s. Two-thirds of the online participants were in their 40s and 50s.

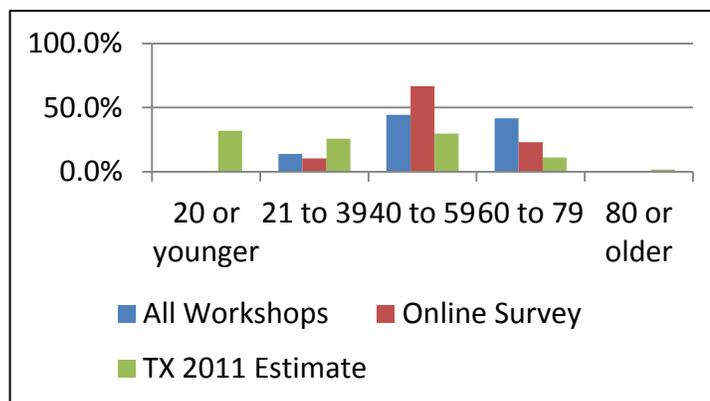


Exhibit 3: Age of Participants

Public participation for a project such as a Mobility Plan update seldom includes children, so it is not surprising that there are none included here. **Exhibit 3** also shows that a smaller share of participants in the workshops and online surveys were between 21 and 39 than the share in the Collin County population as a whole¹. A larger share of participants was between 40 and 79 than this age group’s share in the population as a whole.

5.2. Tenure in Collin County (Home and Work)

Most participants are long-term residents of Collin County. **Exhibit 4** shows the length of residency in Collin County for participants at each workshop, then for all workshop participants, and finally for online participants.

¹ The ‘TX 2011 estimate’ is the Texas State Demographer’s estimate of the demographic characteristics of Collin County residents in 2011.

Just over 40% of workshop participants and almost half (48%) of online participants have lived in Collin County for more than twenty years. A small percentage of participants (8.4% of workshop participants and 10.3% of online participants) have lived here for five or fewer years. Therefore, the input from these workshops reflects the perspective of people who made their initial choice to locate in Collin County many years ago and have chosen to remain here. Their views may be different from the perspectives of people who have chosen a Collin County location more recently.

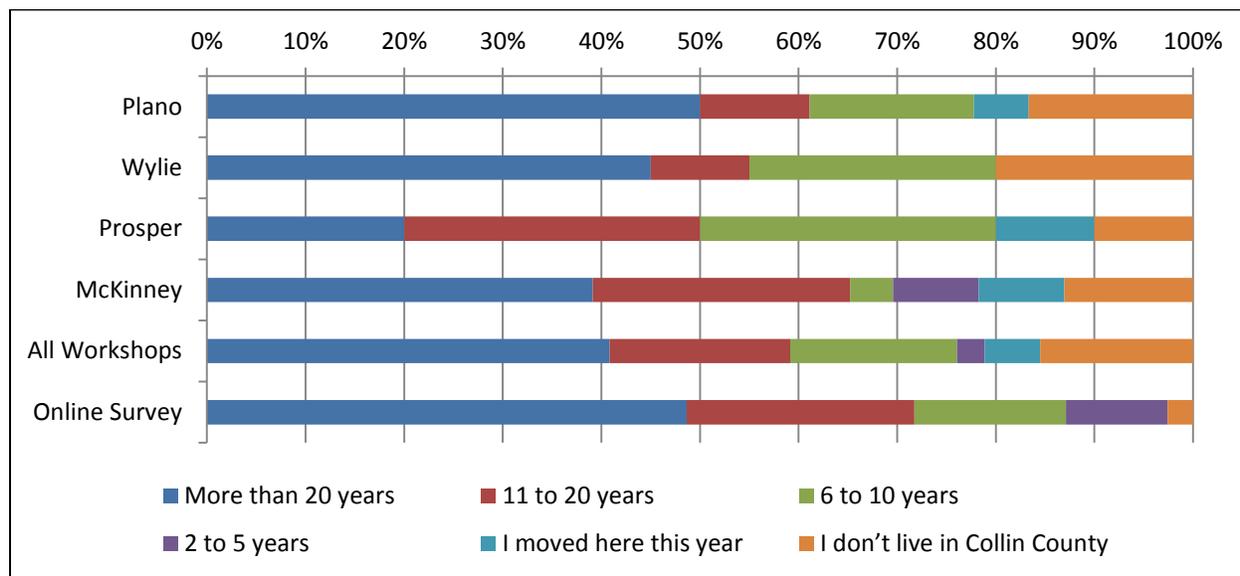
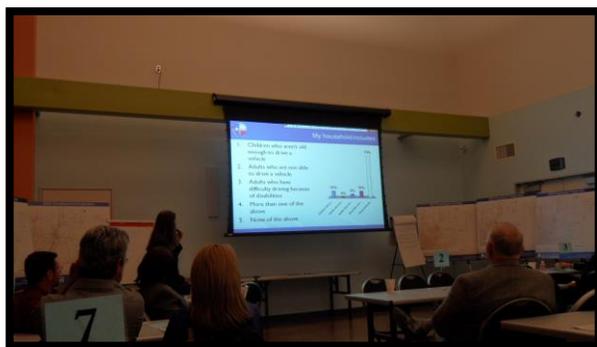


Exhibit 4: Length of Residence in Collin County

Approximately 15% of workshop participants did not live in Collin County; presumably they attended because of their business locations or work responsibilities.

Exhibit 5 shows that participants in this Mobility Plan Update have worked in Collin County for a shorter length of time than their time of residence here. Only 16.2% of workshop participants have worked here for over 20 years. Not surprisingly, given the length of Collin County residence reported in **Exhibit 4**, a substantial share of workshop participants (22.1%) are retired, students or otherwise not in the work force. Online participants include a smaller share of people who are not in the work force (5.3%), more people who have worked here for over 20 years (21.1%) and a larger share of people who work outside Collin County (31.6%).

Community Workshop in Wylie, TX



Community Workshop in Wylie, TX



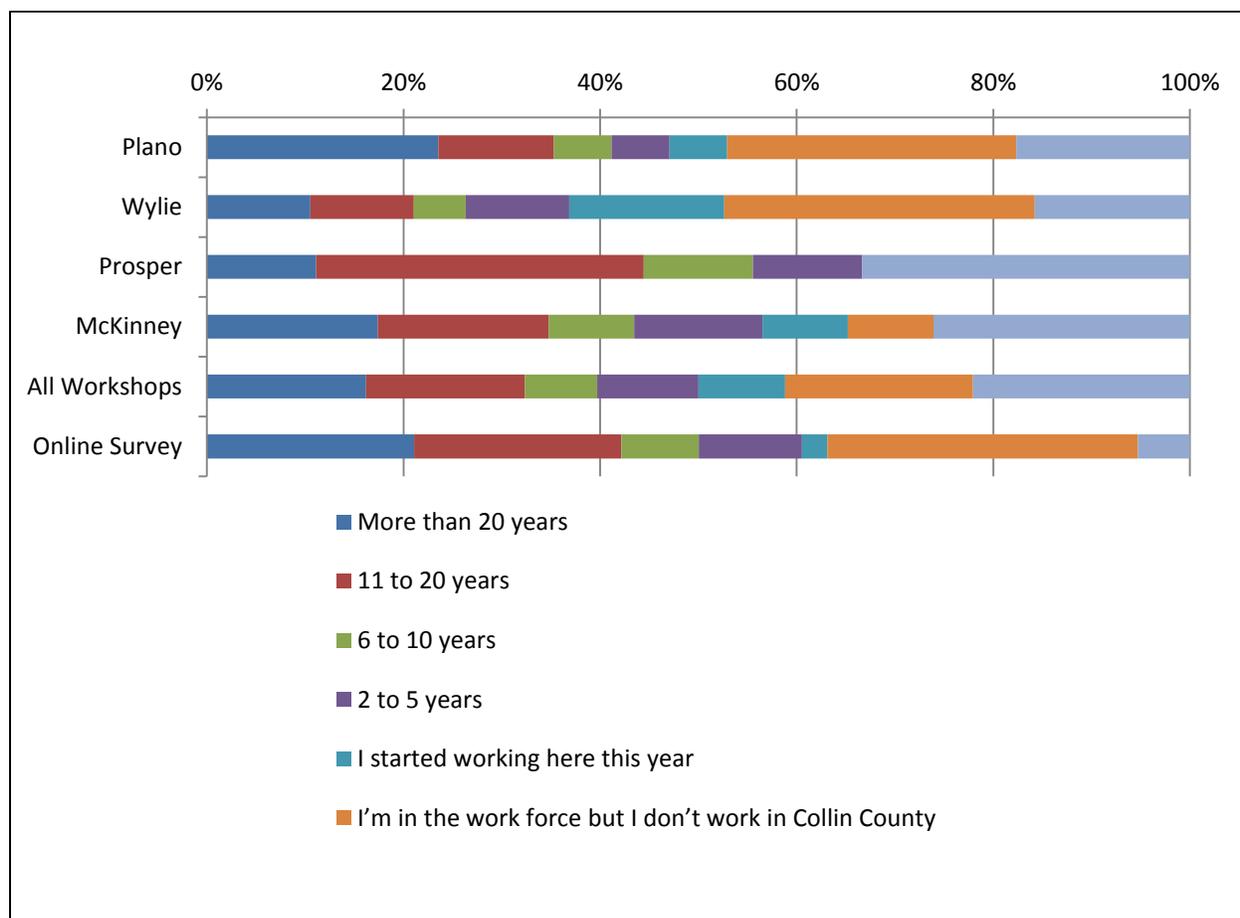


Exhibit 5: Status of Work in Collin County

5.3. Participants' Household Characteristics

Keypad and online survey questions also asked participants for information about a few household characteristics that affect demands on the mobility system. **Exhibit 6** presents information about the characteristics of people in participants' households. By far the largest share of workshop participants (58.3%) are people who live only with a spouse or partner. For online participants, the share of people who live only with a spouse or partner is equal to the share whose households include both children and other adults (39.5%). People who live just with a spouse or partner (therefore, a household with 2 adults and no children) are much more highly represented by these participants than their share in the overall Collin County population. According to the ACS 2007-2011 estimates, such households were 27.2% of the households in Collin County during that five year period². The online survey participants are similar to the ACS estimates in terms of the share of households with both adults and children; the ACS estimates that 34.7% of Collin County households during the 2007-2011 period were households including the adult's own children under the age of 18. Mobility plan

² The ACS is the American Community Survey, conducted by the U.S. Census Bureau. The data are estimates developed based on sample surveys over the period from 2007 to 2011.

participants under-represent single person households and single parent households compared to the ACS estimates.

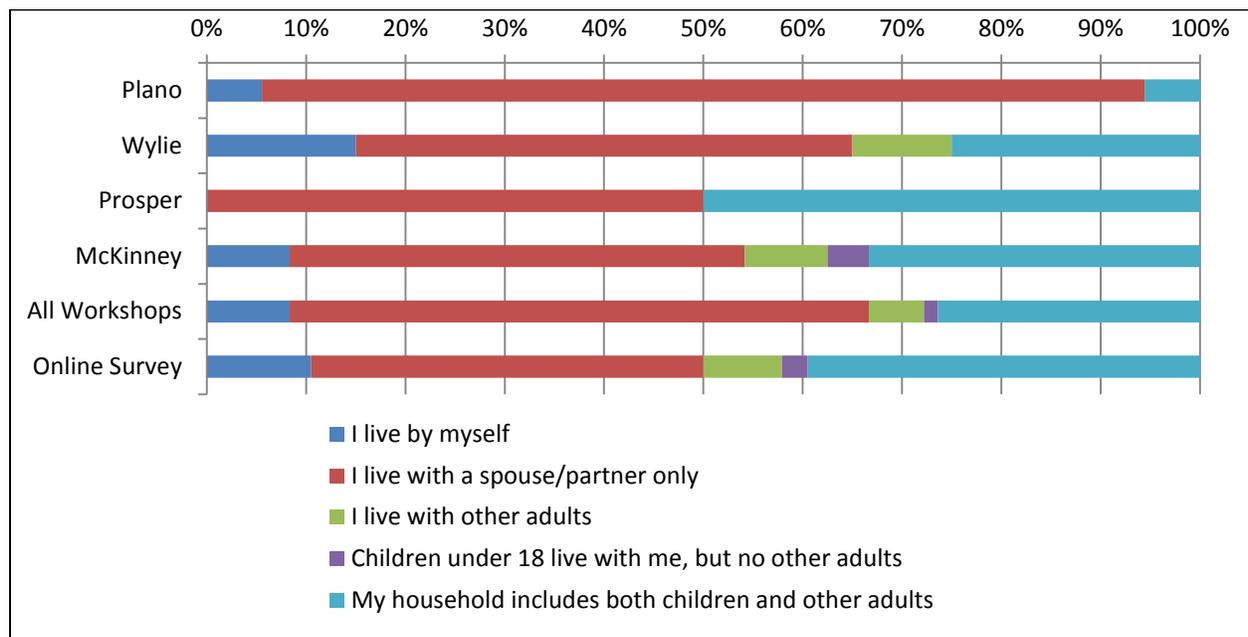


Exhibit 6: Participants' Household Characteristics

For most participants, all members of their household can drive. For workshop participants, 73.6% of respondents said they did not have household members who could not drive; 67.6% of online participants said the same³. Almost a third (29.7%) of online participants had children in their households who were too young to drive.

Not surprisingly, all participant households had at least one vehicle (car or truck). **Exhibit 7** shows that most households had two vehicles, while 43% of households had three or more vehicles.

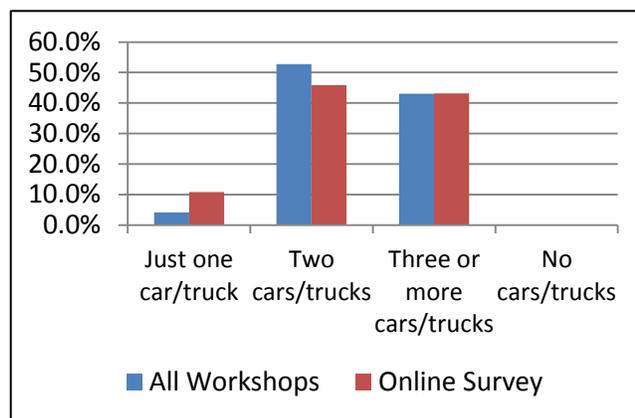


Exhibit 7: Car Ownership

³ The questions asked whether the participant's household included 'children who aren't old enough to drive a vehicle', 'adults who are not able to drive a vehicle', 'adults who have difficulty driving because of disabilities', 'more than one of the above' or 'none of the above'. The responses reported here are 'none of the above'.

6.0 PUBLIC INPUT HIGHLIGHTS

The discussion below summarizes the highlights of input obtained from the community through all the methods described above. Detailed information on these responses, as well as the individual written comments received through comment forms and email, are found in the **Appendix F** and **Appendix G** of this report.

6.1. Current Transportation Conditions

The input received through this public outreach process provides insight into perspectives about the existing transportation system. According to participants, the biggest problems caused by congestion are ‘I spend time stuck in traffic instead of with family and friends’ and ‘It wastes gas and money.’ **Exhibit 8** shows these responses for each workshop, for all workshops combined and for online participants. Mobility strategies and investments that save time, gas and money appear to have higher value to participants than strategies that simply shorten the work commute.

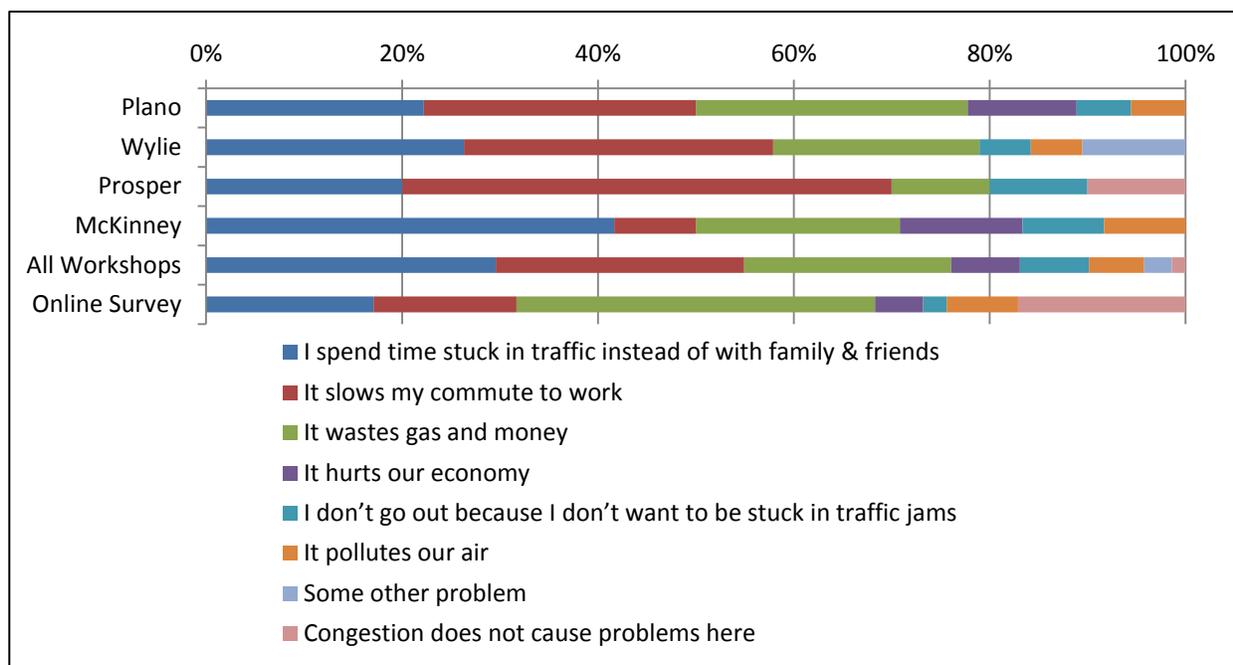


Exhibit 8: Biggest Problems from Congestion

The worst traffic congestion by far, in the view of all participants, in the congestion on U.S. 75 – 72.9% of workshop participants and 65.1% of online participants felt this way. Congestion in the developed southern and western parts of the county or congestion on routes between these developed communities and outlying destination were the biggest congestion concerns for about 15% of both workshop and online participants. 14% of online participants felt that the biggest congestion problem was in the rural northern and eastern parts of the County. **Exhibit 9** presents these results.

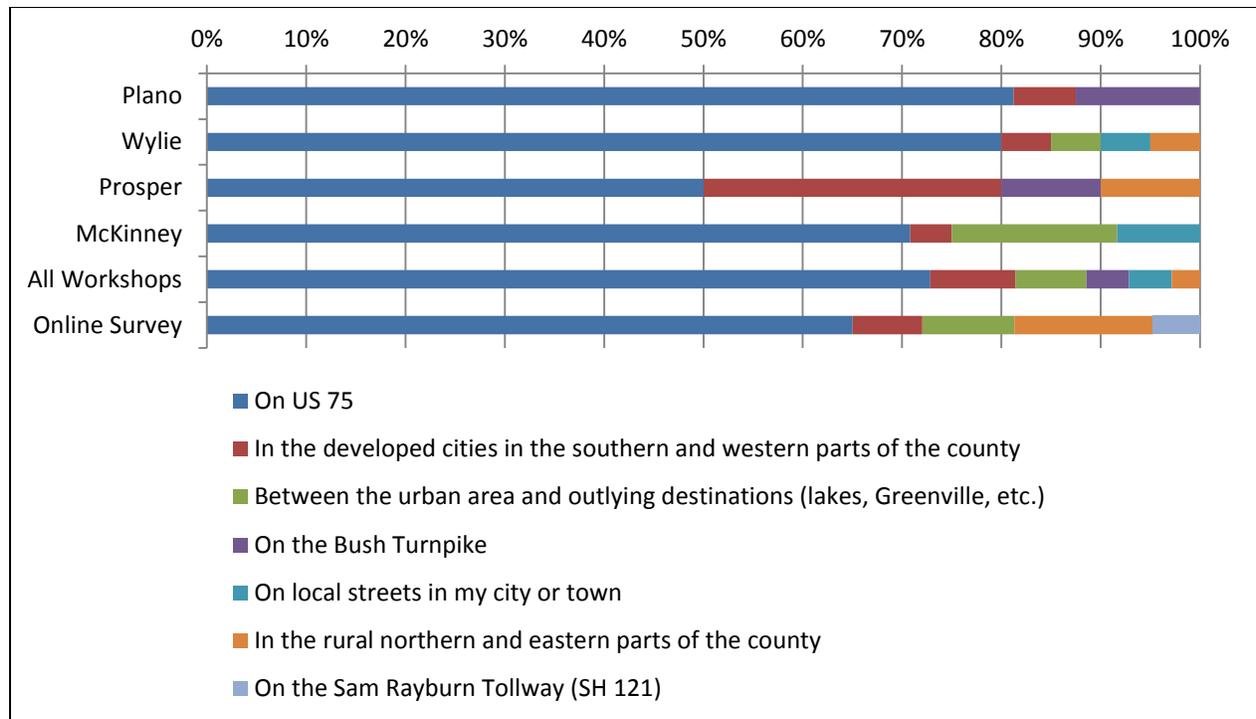


Exhibit 9: Worst Congestion

Finally, many participants are interested in having a wider range of travel options than currently exist. **Exhibit 10** shows that significant percentages of respondents were interested in one or more of the additional options that could increase the range of mobility choice in Collin County. 45.1% of workshop participants and 17.1% of online participants say they would like more than one of these additional options.

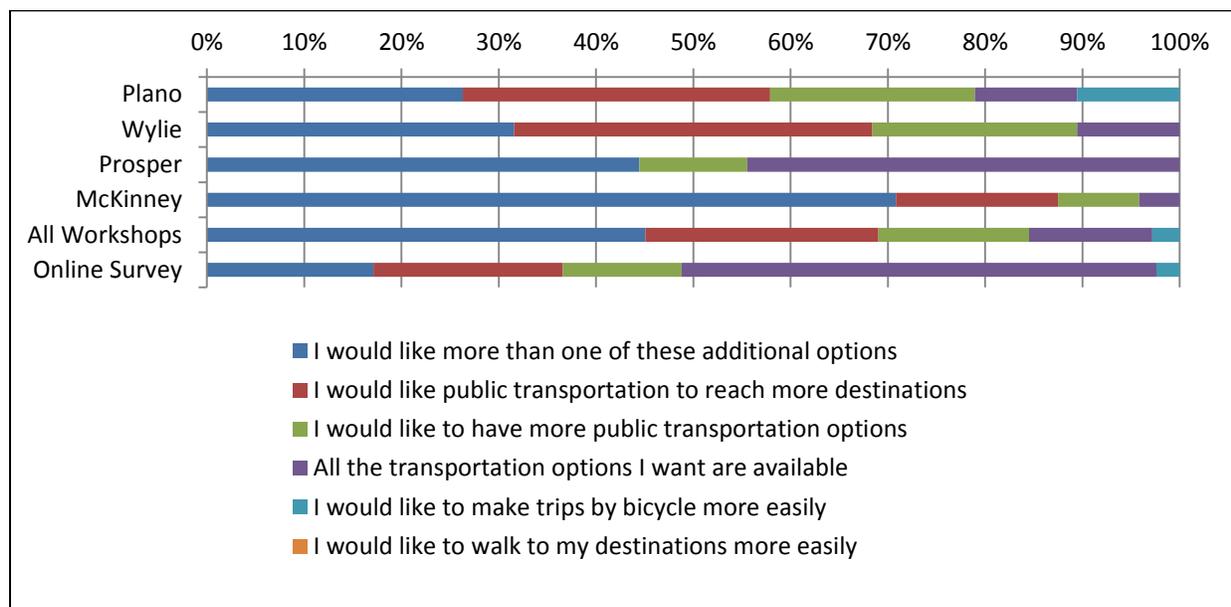


Exhibit 10: Mix of Travel Options

Online participants are more satisfied with the current range of choices, with almost half (48.8%) saying that all the transportation options they want are available. Only 12.7% of workshop participants feel this way.

6.2. Desired Mobility Improvements

The small groups at each workshop responded to a set of questions about mobility improvements that would do the most to improve three key aspects of Collin County in the future – its day-to-day quality of life, its economy and its pattern of development.

The responses from all workshop groups are found in this report's appendices, as are the comments provided online. Some of the preferred improvements for each of these areas are shown in **Exhibits 11, 12 and 13**.

While some of the improvements identified by participants are the more traditional major capital projects that increase roadway capacity, it is notable that many of these ideas take other approaches to improving mobility. Many comments support an expansion of DART and/or other public transportation options. Participants also supported efforts to develop in a way that makes it easy for people to use transit. They recognize that transit-oriented development – having a compact development pattern with many residents and jobs in walking or biking distance of transit stations – will result in the

Mobility improvements that would do the most to improve day-to-day quality of life?

- DART
- Bike lanes
- Shoulders on all roads
- HOV lanes w/ cameras
- Outer Loop
- Specific changes on 380
- Wider roads w/turn lanes for school buses
- Cotton Belt passenger rail
- Overpasses
- Electronic devices
- Eliminate gating
- Motorcycle lanes
- Extension of DNT
- Improve E-W options
- Roads built for 30 year life
- Countywide bus system

11/13/2013 27

Exhibit 11: Quality of Life Improvements

Mobility improvements that would do the most to support the economy?

- Transportation Demand Management
- Relieve 75 congestion by increasing DART capacity
- Intelligent Trans. Systems
- Improve major routes
- Transit-oriented development
- Use traffic volumes to drive investment
- DNT extension
- Mass transportation
- Cotton belt (bus or train)
- Parking
- Regional airport
- Redevelop existing infrastructure
- Outer Loop (E-W)
- Clean up downtown Prosper
- Bike routes, car & van pool
- Widen I21

11/13/2013 28

Exhibit 12: Economic Improvements

Mobility improvements that would do the most to encourage desired development?

- Outer Loop
- More E-W roads
- Countywide bus system
- More green space
- Cross [Lake] Lavon
- Transit alternatives
- DART paralleling DNT
- Expand road & rail E. of Lavon
- N-S thoroughfares
- More attractive roadways, w/ trees, amenities
- Improve mass transit
- Parks, bike trails, quality of life
- Model for live-work-play
- Cotton Belt

11/13/2013 29

Exhibit 13: Improvements for Desired Development

best return on public investments in transit.

Also notable are the suggestions related to the use of technology. These ideas include intelligent transportation systems, transportation system management, transportation demand management, and the use of electronic devices (such as smart phones) to help people plan routes that avoid accidents and congestion. These technologies allow Collin County to use existing transportation infrastructure more efficiently. They save time because drivers are not caught in congestion at peak hours or in unexpected traffic jams due to accidents, construction or roadway maintenance.

Many participants were interested in having better and safer routes for walking and biking to destinations that are close to home or work. These interests suggest that Collin County may be able to improve mobility by making bike and pedestrian improvements that allows people the choice of making trips without driving cars.

Finally, a number of recommended improvements relate to a specific segment of road or a certain intersection. These comments are quite useful to the consultant team, because they reflect actual user experience with these particular locations. This experience can be used to double-check results from the team's computer modeling and other analysis. It may be possible to address these bottlenecks with operational changes to turning lanes, signalization and other lower-cost improvements to the existing system.

All of these ideas will be examined as part of the Consultant Team's analysis of alternative transportation investments for Collin County.

6.3. Benefits From Investments

Participants were asked about the importance of a variety of possible benefits that mobility improvements could provide. **Exhibit 14** summarizes those responses. In this chart, the potential benefits are listed in the order of perceived value. Reducing congestion during peak travel periods was considered 'very important' or 'somewhat important' by almost all workshop participants (94.3%) and by most online participants (81.0%). The second most-valued benefit of mobility improvements was 'supporting the vitality of existing cities and neighborhoods'. Providing transportation systems and choices for businesses was the third-most valued. These three were considered 'very important' or 'somewhat important' by a majority of online participants and by over 90% of workshop participants.

Potential Mobility Benefit	All Workshops		Online	
	Very/ Somewhat important	Not very important / Very unimportant	Very/ Somewhat important	Not very important / Very unimportant
Reducing congestion during peak travel periods	94.3%	2.9%	81.0%	14.3%
Supporting the vitality of existing cities and neighborhoods	91.7%	1.4%	64.3%	9.5%
Providing the transportation system and choices businesses need to succeed	91.5%	1.4%	50.0%	14.3%
Reducing long-term costs to operate & maintain transportation facilities	87.1%	2.9%	42.9%	28.6%
Reducing air quality and other environmental effects of transportation	81.4%	8.6%	69.8%	18.6%
Reducing transportation costs for Collin County households	74.3%	10.0%	59.5%	16.7%
Reducing traffic congestion on local streets or roads near my home	68.1%	21.7%	53.7%	26.8%
Giving me more choices in modes of travel	67.6%	16.9%	40.5%	38.1%
Making it easier to move freight within and through the County	66.7%	12.5%	21.4%	47.6%
Making it easier to develop areas that are not now suburban or urban	52.9%	30.0%	16.3%	58.1%

Exhibit 14: Benefits Desired From Mobility Improvements

Of all the potential mobility benefits, the one that is least important to participants is ‘making it easier to develop areas that are not now suburban or urban’. Online participants in particular do not view this as a benefit – only 16.3% felt it was ‘very important’ or ‘somewhat important’, while 58.1% felt it was ‘somewhat unimportant’ or ‘very unimportant’.

The public’s perspective on the relative value of these mobility benefits will be considered as alternative transportation investments are studied. The analysis should use evaluation measures that indicate how potential improvements perform in terms of providing the benefits stakeholders said were most important.

6.4. Design of Improvements

Exhibit 15 presents stakeholders’ perspectives on design aspects of transportation improvements. The design features are presented in order according to how desirable they were to participants, with the highest ranked feature listed first. Design that is compatible with surrounding uses and areas was rated most highly by both workshop and online participants. This response suggests that context-sensitive design should be an important part of Collin County’s approach to mobility system investments.

	All Workshops		Online	
	Essential/ Desirable	Not necessary/ Should not be included	Essential/ Desirable	Not necessary/ Should not be included
Design that is compatible with the surrounding uses and areas	90.0%	0.0%	76.9%	7.7%
Design that provides safety to all people using the facility	89.9%	4.3%	71.8%	5.1%
Design that minimizes costs over the lifetime of the facility	85.9%	7.0%	71.8%	10.3%
Design that makes the most of technology for way-finding, traffic reporting, etc.	76.1%	8.5%	44.7%	21.1%
Build enough capacity to meet short-term needs (5 to 10 years)	75.0%	4.2%	66.7%	5.1%
Build in additional capacity for needs 25 or 30 years from now	68.6%	8.6%	48.7%	17.9%
Design that reflects the unique identity of the surrounding area	65.3%	6.9%	42.5%	20.0%
Design that is complete – meets the needs of people using all travel modes	64.3%	8.6%	53.8%	12.8%

Exhibit 15: Desired Design Features

Other important design features emphasize safety of all users and reduced lifetime costs for the facilities. These responses show that future mobility improvements should provide safety for pedestrians and cyclists, and well as drivers and passengers of vehicles. They also support efforts to use life-cycle costs (including operation and maintenance over the life of the facility) rather than initial construction cost as the basis for financial evaluation.

These perspectives should guide the consultant team as it develops a set of recommended improvements and a fiscally-constrained plan.

6.5. Next Steps

The consultant team will conduct computer modeling of the mobility system and possible future investments. The modeling results will be evaluated and recommendations will be made to Collin County. The results of this public input process will play an important role in these next steps. The evaluation of modeling results will consider the preferences expressed by stakeholders; evaluation measures will be included so decision-makers can see how well a particular mobility improvement performs on issues that are important to stakeholders. Design preferences will help to shape the consultant team’s recommendations.

When the alternatives have been evaluated and a draft of the updated Mobility Plan has been prepared, there will be another public meeting for review and comment. At this session, the recommendations will be presented in a way that explains to stakeholders how their input has shaped the evaluation and recommendations. Stakeholders who

participated now were interested in continuing their involvement – 77.5% and 55.3% said they would ‘definitely’ stay involved. Hopefully, they will find that the Mobility Plan update recommendations reflect their priorities and suggestions.

Collin County Mobility Plan



Community Meeting
Draft Collin County Mobility Plan
February 18, 2014

Collin County Mobility Plan

6:00 to 7:00 p.m. – Open House
 7:00 p.m. – Welcome & Intro
 7:05 to 7:45 p.m. – Presentation
 7:45 p.m. – Report of Open House Stations
 8:00 p.m. – Questions & Comments
 8:30 p.m. -- Adjournment



Community Meeting
Draft Collin County Mobility Plan
February 18, 2014



Purpose of Meeting

- Share the draft Collin County Mobility Plan update
- Provide opportunities for questions and discussion about recommendations
- Obtain feedback from participants

4/2/2014 3



Purpose of Mobility Plan

- Identify transportation needs to serve future growth.
 - Develop plans for 2020 and 2035 to guide development of the transportation system.
 - Preserve corridors and acquire right-of-way for planned facilities as development occurs.
 - Advise citizens, property owners and developers of long-range plans.

4/2/2014 4



Purpose of Mobility Plan

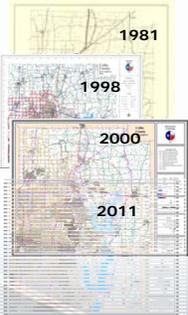
- Guide public investments in improving transportation facilities and services.
 - Determine the County’s capability to fund improvements needed by 2020.
 - Coordinate plans among Cities.

4/2/2014 5

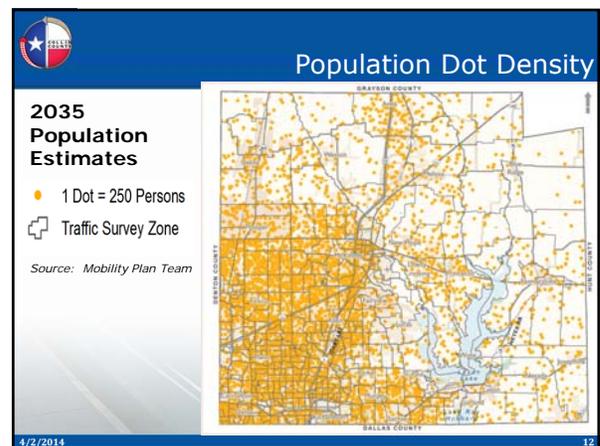
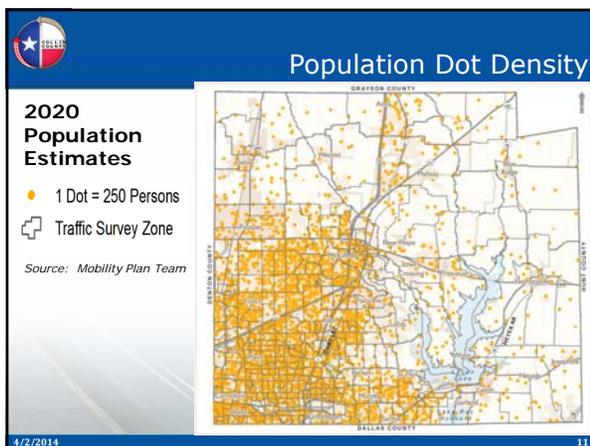
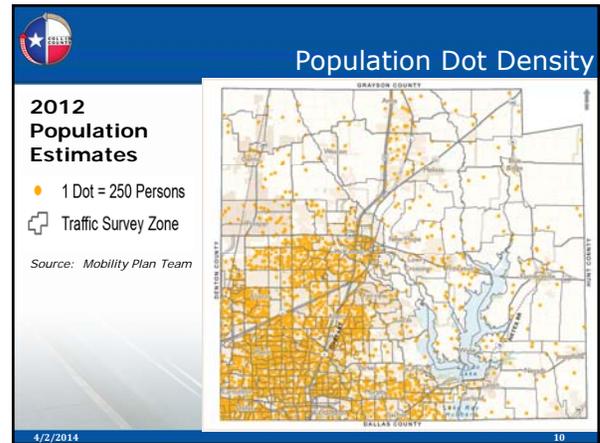
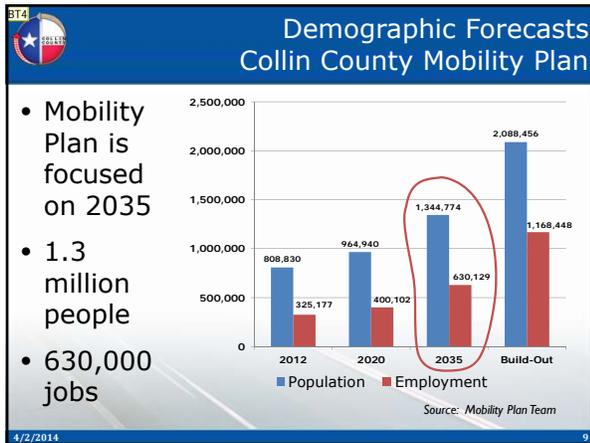
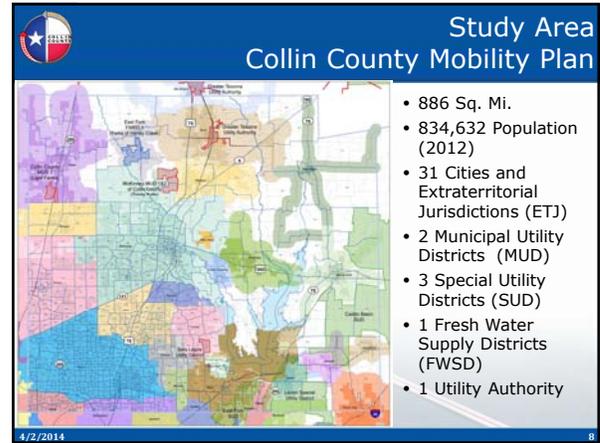
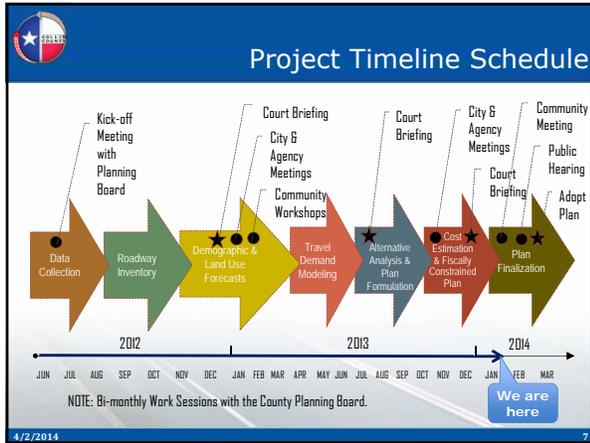


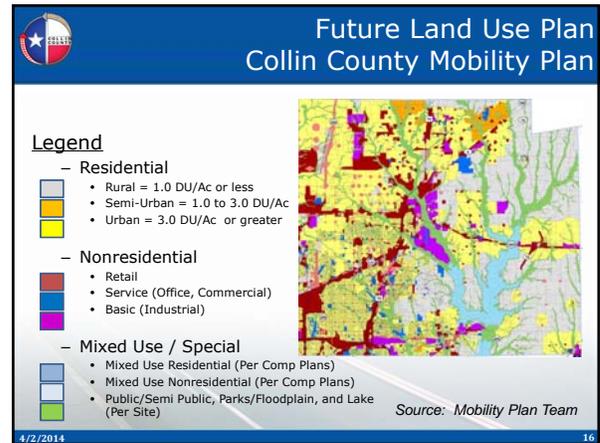
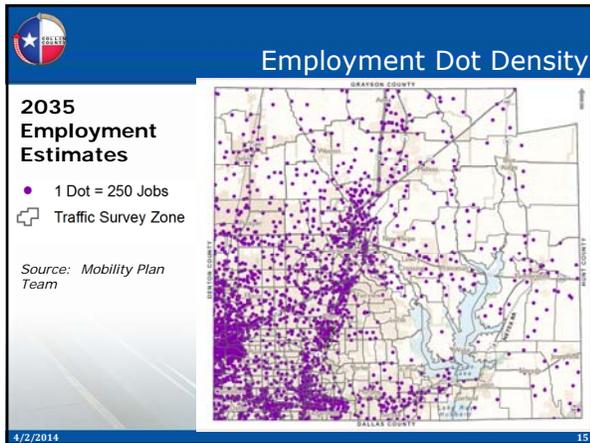
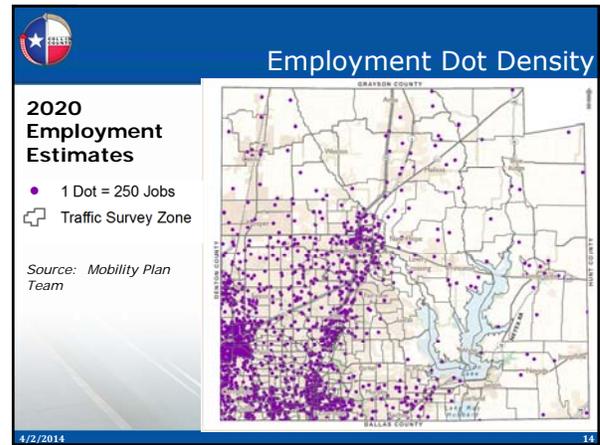
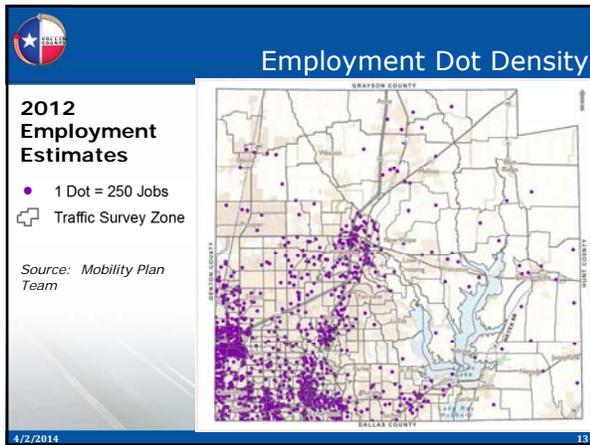
History of Collin County Mobility Plan

- 1981 – Thoroughfare Plan adopted
- 1998 – Mobility Plan developed
- 2000 – Mobility Plan update
- 2002 – Thoroughfare Plan update
- 2007 – Mobility Plan update
- 2011 – Thoroughfare Plan update
- **2014 – Mobility Plan update**



4/2/2014 6





- Initial Public Outreach**
1. Opportunities for involvement
 - A. Any interested person or group could participate
 2. Choices for involvement method
 - A. Workshops in all 4 precincts
 - B. Online: Email and survey
 - C. County social media
 3. Get the word out through a variety of means
 - A. Meeting announcements
 - B. Media
 - C. Web
- 4/2/2014 17





Travel Demand Modeling

- NCTCOG Regional Model used to predict traffic on Collin County road network
- Results include Average Daily Traffic (ADT) volumes and Level of Service (LOS)

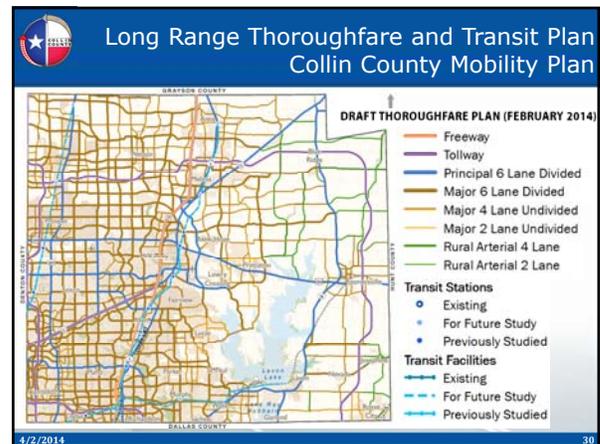
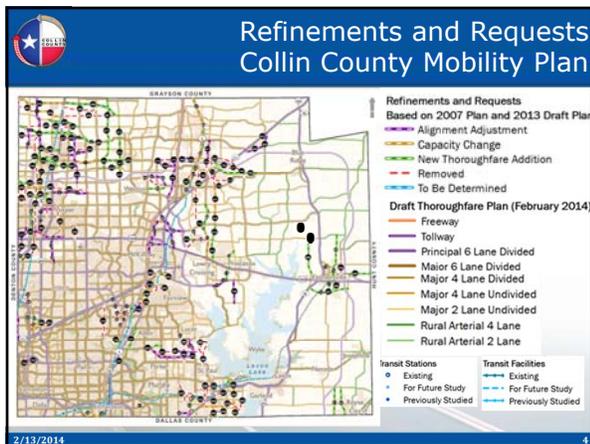
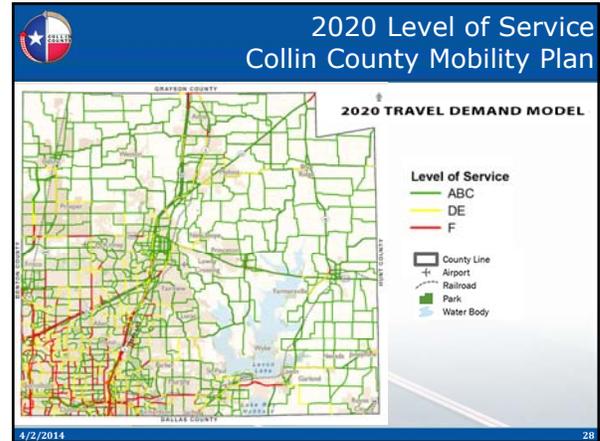
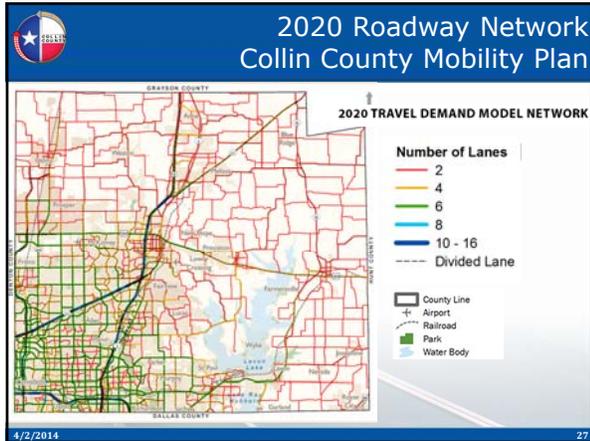
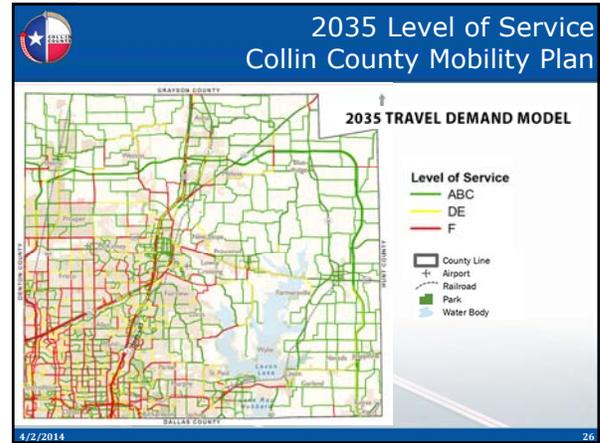
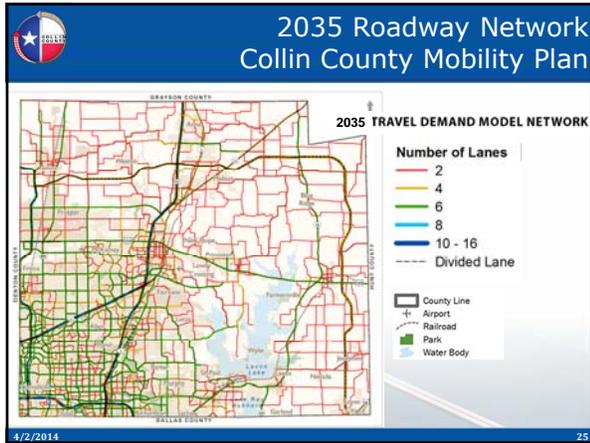
Travel Demand Modeling

- Level of Service (LOS) is a performance measure of traffic volume versus roadway capacity
 - A, B, and C – Desirable
 - D – Acceptable
 - E – Marginal
 - F – Unacceptable

Level of Service (LOS)

LOS "A" LOS "C"

LOS "D" LOS "F"



Fiscally Constrained Plan (2020)

- **Projects Needed by 2020** **\$928M**
- **Funding by others** **\$599M**
(Fed, State, TTA)
- **Resulting Funding required** **\$329M**
by County and cities

4/2/2014 31

2020 Roadway Improvement Projects Fiscally Constrained Plan

4/2/2014 32

DART's Long Range Transit System Plan

4/2/2014 33

Long Range Thoroughfare and Transit Plan Collin County Mobility Plan

DRAFT THOROUGHFARE PLAN (FEBRUARY 2014)

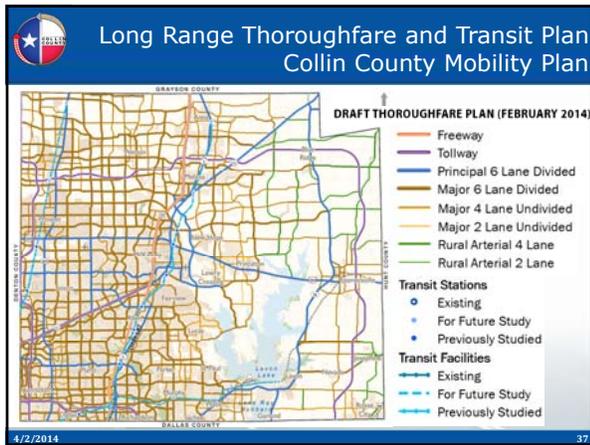
4/2/2014 34

Regional Trails Master Plan Collin County Mobility Plan

4/2/2014 35

NCTCOG Regional Veloweb Plan

4/2/2014 36



- ### Next Steps
- Incorporate comments from tonight's meeting
 - Review by Collin County Planning Board
 - Presentation to Collin County Commissioners Court
 - Public Hearing by Commissioners Court
 - Consider Adoption of Mobility Plan

Station Reports for Open House

Collin County Mobility Plan

Collin County - Engineering Department
4690 Community Avenue, Suite 200
McKinney, TX 75071
www.co.collin.tx.us/engineering/mobility

Questions and Discussion

Collin County Mobility Plan

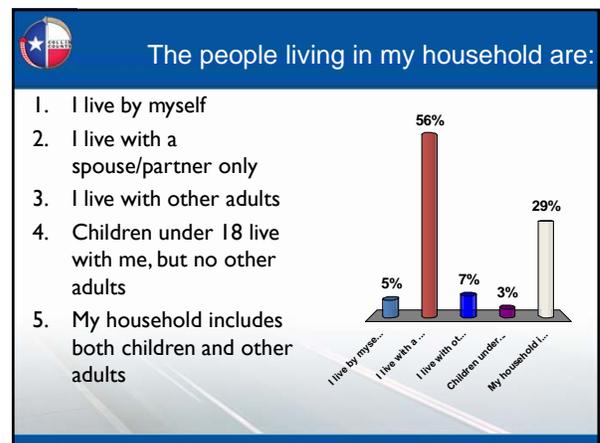
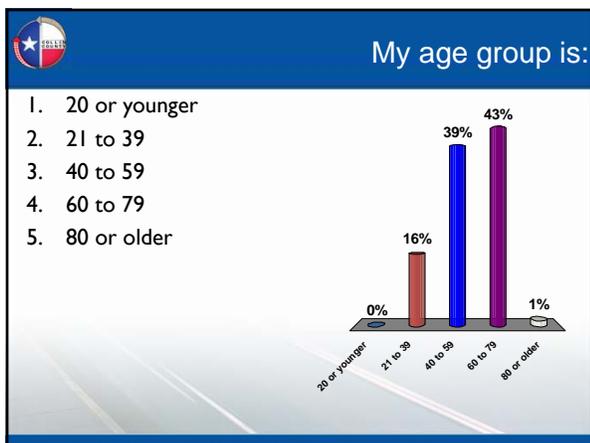
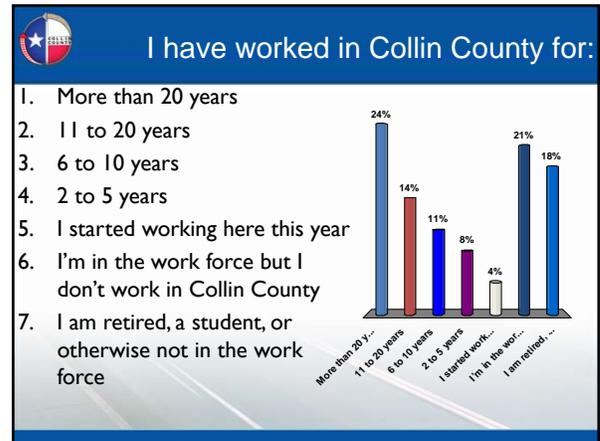
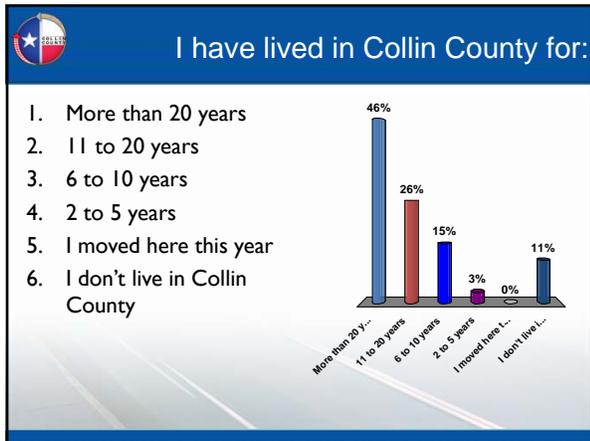
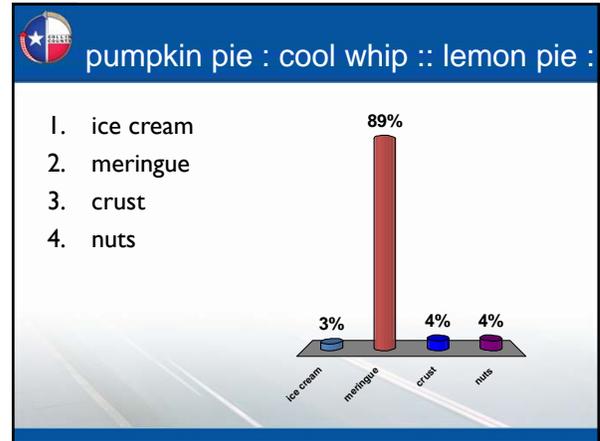
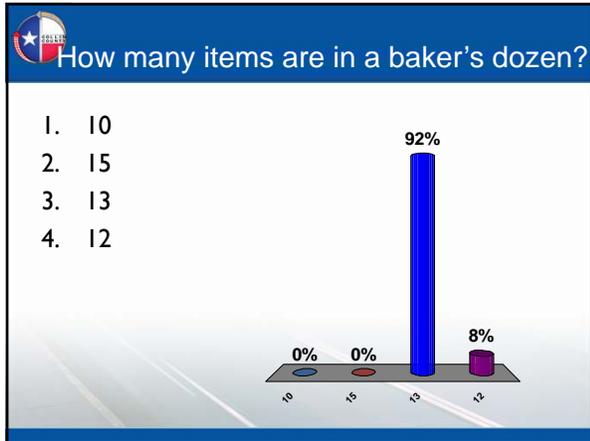
Collin County - Engineering Department
4690 Community Avenue, Suite 200
McKinney, TX 75071
www.co.collin.tx.us/engineering/mobility

Keypad Polling

Collin County Mobility Plan

Collin County - Engineering Department
4690 Community Avenue, Suite 200
McKinney, TX 75071
www.co.collin.tx.us/engineering/mobility

- ### Keypad Polling
- Provides feedback from all individuals participating in the session
 - Can reflect the actual discussion at the session
 - Is anonymous
 - Shows results immediately
 - Allows more detailed analysis after the session



Benefits I want from Collin County's mobility investments

How important is this benefit from investments in mobility within Collin County?

Reducing congestion during peak travel periods

1. Very important
2. Somewhat important
3. Neutral
4. Not very important
5. Very unimportant
6. I'm not sure

Importance Level	Percentage
Very important	56%
Somewhat important	30%
Neutral	6%
Not very important	5%
Very unimportant	0%
I'm not sure	3%

Supporting the vitality of existing cities and neighborhoods

1. Very important
2. Somewhat important
3. Neutral
4. Not very important
5. Very unimportant
6. I'm not sure

Importance Level	Percentage
Very important	62%
Somewhat important	23%
Neutral	8%
Not very important	5%
Very unimportant	1%
I'm not sure	0%

Providing the transportation system and choices businesses need to succeed

1. Very important
2. Somewhat important
3. Neutral
4. Not very important
5. Very unimportant
6. I'm not sure

Importance Level	Percentage
Very important	75%
Somewhat important	23%
Neutral	3%
Not very important	0%
Very unimportant	0%
I'm not sure	0%

Reducing long-term costs to operate & maintain transportation facilities

1. Very important
2. Somewhat important
3. Neutral
4. Not very important
5. Very unimportant
6. I'm not sure

Importance Level	Percentage
Very important	71%
Somewhat important	24%
Neutral	0%
Not very important	1%
Very unimportant	3%
I'm not sure	1%

Reducing air quality and other environmental effects of transportation

1. Very important
2. Somewhat important
3. Neutral
4. Not very important
5. Very unimportant
6. I'm not sure

Importance Level	Percentage
Very important	49%
Somewhat important	29%
Neutral	16%
Not very important	5%
Very unimportant	1%
I'm not sure	0%

Overall Feedback on Mobility Plan Recommendations

Based on what you know now, do you think the improvements recommended in this Mobility Plan will improve Collin County's future?

For each of these statements, please indicate your level of agreement or disagreement.

The Long Range Thoroughfare and Transit Plan seems adequate to meet Collin County's needs.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	17%
Agree	45%
I'm not sure	20%
Disagree	15%
Strongly disagree	3%

These Mobility Plan recommendations enhance quality of life in Collin County.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	23%
Agree	47%
I'm not sure	21%
Disagree	7%
Strongly disagree	3%

These Mobility Plan recommendations support desirable growth in Collin County's economy.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	26%
Agree	53%
I'm not sure	15%
Disagree	4%
Strongly disagree	3%

These Mobility Plan recommendations encourage desirable growth patterns in Collin County.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	11%
Agree	41%
I'm not sure	27%
Disagree	15%
Strongly disagree	7%

These Mobility Plan recommendations expand transportation choices for Collin County residents.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	5%
Agree	32%
I'm not sure	30%
Disagree	22%
Strongly disagree	11%

Feedback on the Mobility Plan's 2020 Recommendations

Based on what you know now, do you support the mobility improvements recommended by 2020?

For each of these statements, please indicate your level of agreement or disagreement.

The 2020 freeway & tollway recommendations seem adequate to meet Collin County's needs.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	8%
Agree	48%
I'm not sure	24%
Disagree	16%
Strongly disagree	4%

The 2020 arterial recommendations seem adequate to meet Collin County's needs.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	5%
Agree	45%
I'm not sure	32%
Disagree	14%
Strongly disagree	4%

The 2020 transit recommendations seem adequate to meet Collin County's needs.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	1%
Agree	17%
I'm not sure	45%
Disagree	25%
Strongly disagree	12%

The 2020 bike & pedestrian recommendations seem adequate to meet Collin County's needs.

- Strongly agree
- Agree
- I'm not sure
- Disagree
- Strongly disagree

Response	Percentage
Strongly agree	9%
Agree	15%
I'm not sure	45%
Disagree	16%
Strongly disagree	15%

Thank you for your participation!

Collin County Mobility Plan

Collin County – Engineering Department
 4690 Community Avenue, Suite 200
 McKinney, TX 75071

www.co.collin.tx.us/engineering/mobility

4/2/2014 66

Collin County Mobility Plan



Community Meeting
Input Received Through Keypad Polling

February 18, 2014

Keypad Polling

Collin County Mobility Plan



Collin County – Engineering Department
4690 Community Avenue, Suite 200
McKinney, TX 75071

www.co.collin.tx.us/engineering/mobility

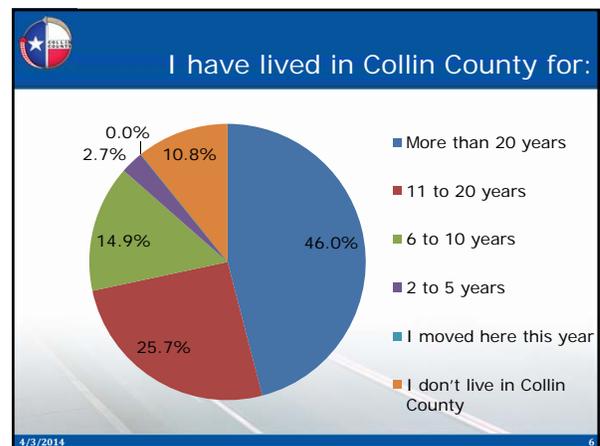
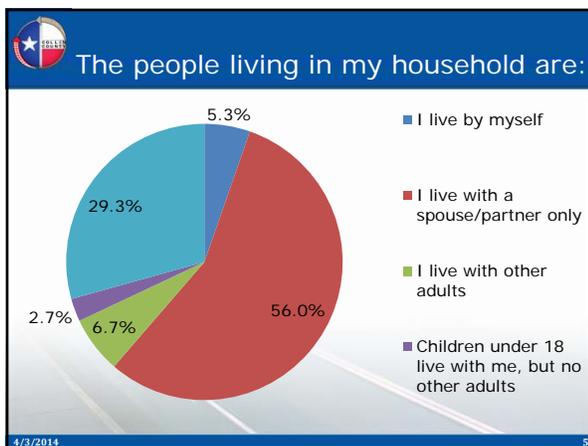
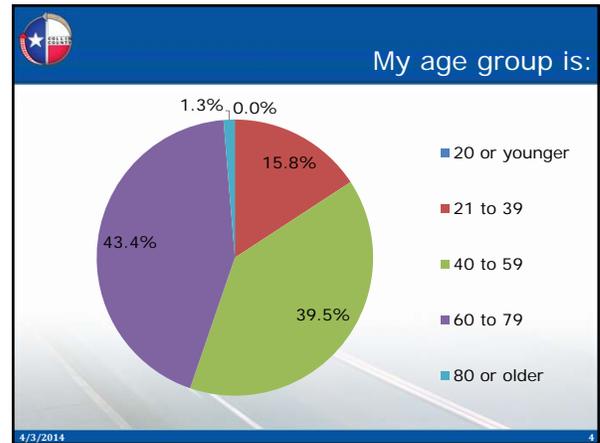
Demographic Characteristics of Meeting Participants

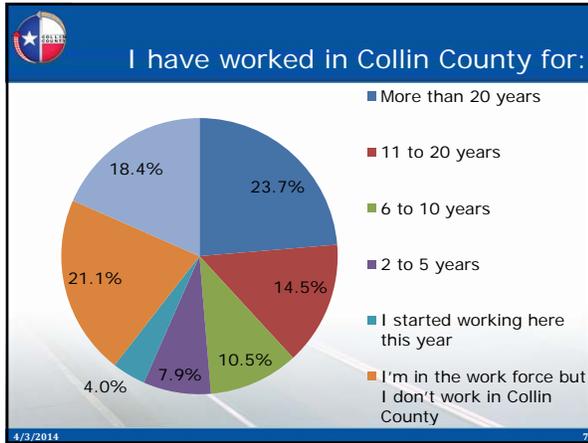
Collin County Mobility Plan



Collin County – Engineering Department
4690 Community Avenue, Suite 200
McKinney, TX 75071

www.co.collin.tx.us/engineering/mobility





Desired Benefits form Mobility Improvements

Collin County Mobility Plan

Collin County - Engineering Department
4690 Community Avenue, Suite 200
McKinney, TX 75071
www.co.collin.tx.us/engineering/mobility

4/3/2014 8

How important is this benefit from investments in mobility within Collin County?

Keypad Results at 2014 Community Meeting	Very important	Somewhat important	Neutral	Not very important	Very unimportant	I'm not sure
	Providing the transportation system and choices businesses need to succeed	74.7%	22.7%	2.7%	0.0%	0.0%
Reducing long-term costs to operate & maintain transportation facilities	70.7%	24.0%	0.0%	1.3%	2.7%	1.3%
Supporting the vitality of existing cities and neighborhoods	62.3%	23.4%	7.8%	5.2%	1.3%	0.0%
Reducing congestion during peak travel periods	55.8%	29.9%	6.5%	5.2%	0.0%	2.6%
Reducing air quality and other environmental effects of transportation	49.4%	28.6%	15.6%	5.2%	1.3%	0.0%

4/3/2014 7

How important is this benefit from investments in mobility within Collin County?

Comparison of 2013 and 2014 Results	Community Meeting (2014)		Initial Community Input (2013)			
	Very/Somewhat imp.	Not very imp. / Very unimp.	All Workshops		Online	
			Very/Somewhat imp.	Not very imp. / Very unimp.	Very/Somewhat imp.	Not very imp. / Very unimp.
Reducing congestion during peak travel periods	85.7%	5.2%	94.3%	2.9%	81.0%	14.3%
Supporting the vitality of existing cities and neighborhoods	85.7%	6.5%	91.7%	1.4%	64.3%	9.5%
Providing the transportation system and choices businesses need to succeed	97.3%	0.0%	91.5%	1.4%	50.0%	14.3%
Reducing long-term costs to operate & maintain transportation facilities	94.7%	4.0%	87.1%	2.9%	42.9%	28.6%
Reducing air quality and other environmental effects of transportation	77.9%	6.5%	81.4%	8.6%	69.8%	18.6%

4/3/2014 8

Feedback on Mobility Plan Recommendations

Collin County Mobility Plan

Collin County - Engineering Department
4690 Community Avenue, Suite 200
McKinney, TX 75071
www.co.collin.tx.us/engineering/mobility

4/3/2014 11

Do you think these improvements will improve Collin County's future?

	Strongly agree / Agree	I'm not sure	Disagree / Strongly disagree
These Mobility Plan recommendations support desirable growth in Collin County's economy.	78.4%	14.9%	6.8%
These Mobility Plan recommendations enhance quality of life in Collin County.	69.3%	21.3%	9.3%
The Long Range Thoroughfare and Transit Plan seems adequate to meet Collin County's needs.	62.7%	20.0%	17.3%
The 2020 freeway & tollway recommendations seem adequate to meet Collin County's needs.	56.0%	24.0%	20.0%
These Mobility Plan recommendations encourage desirable growth patterns in Collin County.	51.4%	27.0%	21.6%
The 2020 arterial recommendations seem adequate to meet Collin County's needs.	50.0%	32.4%	17.6%
These Mobility Plan recommendations expand transportation choices for Collin County residents.	37.8%	29.7%	32.4%
The 2020 bike & pedestrian recommendations seem adequate to meet Collin County's needs.	24.0%	45.3%	30.7%
The 2020 transit recommendations seem adequate to meet Collin County's needs.	18.4%	44.7%	36.8%

4/3/2014 12



Collin County Department of Engineering
4690 Community Avenue, Suite 200
McKinney, Texas 75071

