

3. Social Considerations

Public Benefits of the Transportation System

The transportation system provides residents in the North Central Texas region access to jobs, medical care, education, recreation, and cultural activities. Easy access to daily destinations and multiple transportation options contribute to the quality of life in a neighborhood, city, or region. In coordination with local governments and transportation partners, the North Central Texas Council of Governments aims to develop transportation infrastructure that is accessible to all.

Although most North Central Texans choose to drive, it is crucial to provide other transportation choices. Opportunities to walk, take transit, or cycle are linked to healthy communities. Walking can improve the environment and personal health, reduce traffic congestion, enhance quality of life, and provide economic rewards and other benefits.¹

The Mobility 2045 Update includes policies, programs, and projects that support a range of mobility options that can contribute to healthy, livable communities. By developing active transportation systems such as bicycle and pedestrian facilities, the Mobility 2045 Update promotes physical activity and more equitable communities. Additional information on healthy communities is found in the **Environmental Considerations** chapter and appendix.

Considerations for healthy, livable, and sustainable communities should be integrated into the transportation planning process. This chapter analyzes the social impacts of the regional transportation system. The **Environmental Considerations**, **Operational Efficiency**, and **Mobility Options** chapters of the Mobility 2045 Update recommend programs and projects that support healthy,

livable, and sustainable communities for the existing and future residents of the region.

Did You Know?



By the year 2045, the 12-county Metropolitan Planning Area is forecasted to grow to 11.4 million residents, a 40 percent increase in the North Central Texas population.



All counties in North Central Texas, except for Hunt County, exceed an affordability threshold for the combined cost of housing and transportation: 45 percent of household income. This threshold was identified by the Center for Neighborhood Technology.

Mobility 2045 Update Supported Goals



Ensure all communities are provided access to the regional transportation system and planning process.



Encourage livable communities which support sustainability and economic vitality.



Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.



Provide for timely project planning and implementation.

¹ Sam Schwartz Engineering PLLC & America Walks, 2012, *Steps to a Walkable Community: A Guide for Citizens, Planners, and Engineers*, www.americawalks.org

In This Chapter

- Regional Population and Employment Trends
- Nondiscrimination Efforts
- Travel and Tourism
- Public Participation Requirements

Social Considerations at-a-Glance

Engaging the public and addressing their needs is of utmost importance in any public planning process. The North Central Texas Council of Governments proactively seeks to educate North Central Texans and engage them in the transportation planning process. By 2045, over 11 million people are expected to call the region home. Meeting the mobility needs of today and tomorrow requires all stakeholders to coordinate and collaborate. Nondiscrimination also plays a vital role in the transportation planning process. Through public outreach and analysis, the Regional Transportation Council seeks to understand and address the needs of the North Central Texas community.

Simple justice requires that public funds, to which all taxpayers of all races contribute, not be spent in any fashion which encourages, entrenches, subsidizes, or results in racial discrimination.

John F. Kennedy, 1963

3. Social Considerations: Regional Population and Employment Trends

Introduction

Regional population and employment trends and forecasts analyze where residents live, work, and carry out leisure activities, and predict where residents will do these things in the future. Transportation planners need this information in order to provide facilities and connections that meet the mobility and accessibility needs of existing and future populations.

According to the US Census Bureau, the Dallas-Fort Worth-Arlington Metropolitan Statistical Area² is the fourth most populous in the country and the most populous in the state. Between 2010 and 2019, the Metropolitan Statistical Area added about 950,000 residents. Only one other Metropolitan Statistical Area in the nation—Houston—added a greater number of residents during that period.³ Forecasts project that rapid growth will continue through 2045.

Several key demographics transportation planners must consider are the density, size, and profile of the population. These characteristics impact where transportation improvements will be needed in order to curb congestion and affect the land use-transportation connection. These two aspects are explored further in the **Mobility Options** chapter and the **Sustainable Development** section of the **Operational Efficiency** chapter.

² The Dallas-Fort Worth-Arlington Metropolitan Statistical Area is a Census designation that consists of Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Somervell, Tarrant, and Wise counties. Bureau of Labor Statistics, May 2020 Metropolitan and Nonmetropolitan Area Definitions, https://www.bls.gov/oes/2020/may/msa_def.htm#19100

Regional Demographic Forecast

Historical Population Growth

Historical population data from the US Census Bureau helps inform the regional population and employment projections NCTCOG (North Central Texas Council of Governments) makes for the future. In the 2020 decennial Census, the 12-county Dallas-Fort Worth MPA (Metropolitan Planning Area) had a population of approximately 7.7 million.⁴ By the year 2045, these counties are forecasted to grow to 11.4 million residents. This expected growth represents a 48 percent increase in the population of North Central Texas over 25 years. Historical population growth is important to understanding where populations will grow in the future. **Exhibit 3-1** shows the population distribution by county for 2000, 2010, and 2020 based on Census data.



The four urban counties—Collin, Dallas, Denton, and Tarrant—had a combined population of 6.7 million in 2020, or 87 percent of the 12-county population. This percentage share has remained stable since 2000; however, the individual population shares for Collin and Denton counties have increased while the shares in Dallas and

³ US Census Bureau 2010 and 2019 Population Estimates

⁴ 2020 US Census, www.census.gov

Tarrant counties have decreased. This change can be attributed to rapidly growing cities in Collin and Denton counties.

Exhibit 3-1: Historical Population Growth by County, 2000 to 2020

MPA County	Population					
	2000		2010		2020	
	Number	Percent	Number	Percent	Number	Percent
Dallas	2,218,899	43%	2,368,139	37%	2,613,539	34%
Tarrant	1,446,219	28%	1,809,034	28%	2,110,640	27%
Collin	491,675	9%	782,341	12%	1,064,465	14%
Denton	432,976	8%	662,614	10%	906,422	12%
Ellis	111,360	2%	149,610	2%	192,455	2%
Johnson	126,811	2%	150,934	3%	179,927	2%
Kaufman	71,313	1%	103,350	2%	145,310	2%
Parker	88,495	2%	116,927	2%	148,222	2%
Hood	41,100	1%	51,182	1%	61,598	1%
Hunt	76,596	2%	86,129	1%	99,956	1%
Rockwall	43,080	1%	78,337	1%	107,819	1%
Wise	48,793	1%	59,127	1%	68,632	1%
Totals	5,197,317	100%	6,417,724	100%	7,698,985	100%

Source: 2000, 2010 Decennial Census. 2020 Decennial Census Redistricting Data, www.census.gov

Population Forecasts

A population forecast is a projection of how many people will live in a certain area based on factors like past growth trends, development potential, and market demand. The Mobility 2045 Update uses NCTCOG's 2045 demographic forecast to develop transportation recommendations. The year 2023 is used as a base year in the **Social Considerations** chapter to illustrate general trends in population and employment growth through 2045. Based on population forecasts for 2023 and 2045, the total population of the MPA is projected to increase from 8,153,519 in 2023 to 11,411,548 in 2045.

Exhibit 3-2 represents a 40 percent increase for the region and the growth by individual counties in the MPA.

Tarrant County is projected to gain the most population—over 800,000 residents—between 2023 and 2045. Dallas, Collin, and Denton counties follow Tarrant County in terms of forecasted population growth in this timeframe. Collin and Denton counties are projected to have the greatest percent increase in population at 57 percent.

Exhibit 3-2: Forecasted Population Growth by County, 2023 to 2045

MPA County	2023 Population	2045 Population	Growth	Percent Growth
Collin	1,136,426	1,789,866	653,440	57%
Denton	967,291	1,518,864	551,573	57%
Ellis	208,313	318,261	109,948	53%
Parker	159,301	234,655	75,354	47%
Hood	65,452	95,182	29,730	45%
Rockwall	113,220	161,582	48,362	43%
Wise	75,566	104,006	28,440	38%
Tarrant	2,224,508	3,044,509	820,001	37%
Hunt	105,942	143,625	37,683	36%
Kaufman	153,660	209,441	55,781	36%
Johnson	190,506	258,036	67,530	35%
Dallas	2,753,334	3,533,521	780,187	28%
Totals	8,153,519	11,411,548	3,258,029	40%

Source: NCTCOG 2045 Demographic Forecasts

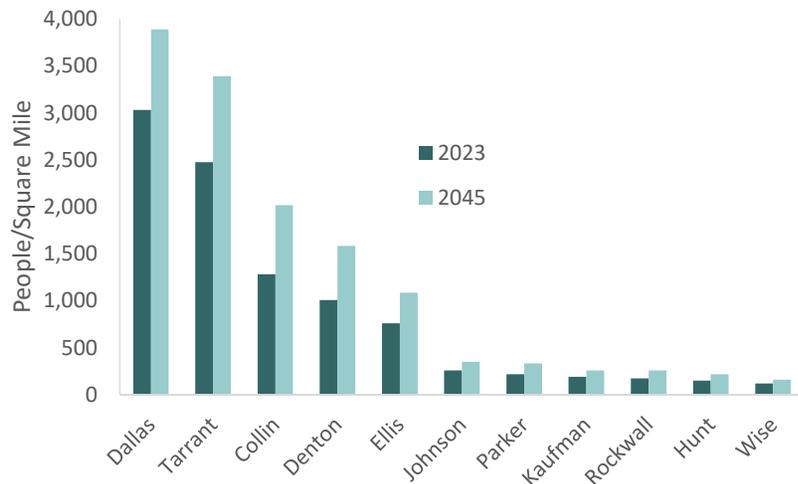


Population Density

In addition to population forecasts, population density is critical when planning transportation facilities. Denser areas may warrant more multimodal transportation infrastructure to ensure that residents are able to travel efficiently. In the four urban counties (Collin, Dallas, Denton, and Tarrant), population density is projected to increase from 1,927 to 2,709 people per square mile between the years 2023 and 2045. For the entire MPA, population density is projected to increase from 853 to 1,209 people per square mile.⁵

Exhibit 3-3 shows increases in population density by county. The counties with the greatest increases in people per square mile are Dallas – 899; Tarrant – 846; Collin – 768; Denton – 624; and Rockwall – 316. In 2045, the five most densely populated counties in the MPA will be Dallas with 3,890 people per square mile; Tarrant with 3,392; Collin with 2,020; Denton with 1,586; and Rockwall with 1,086.

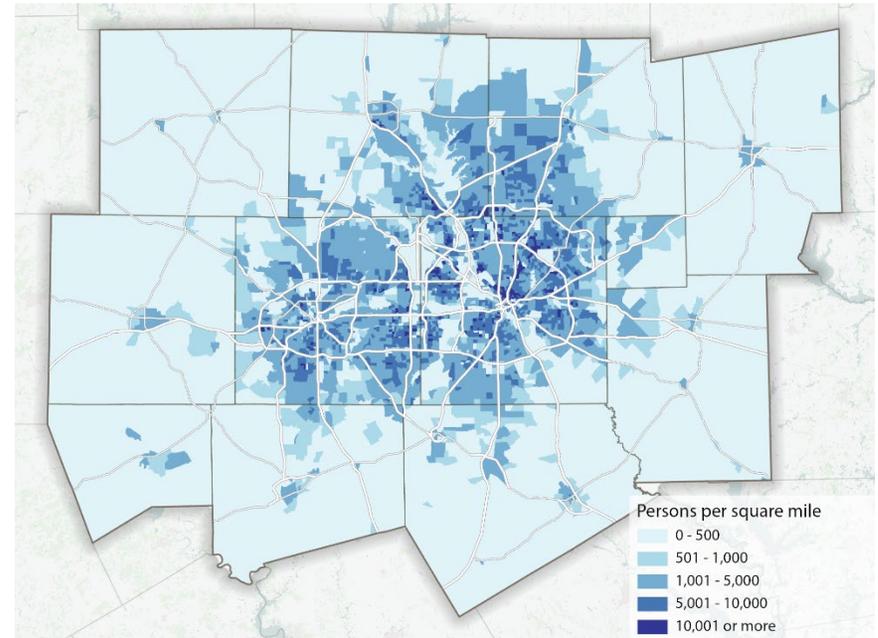
Exhibit 3-3: Change in Population Density in the 12-County MPA, 2023 to 2045



⁵ Population density for the Dallas-Fort Worth MPA is calculated by dividing the total regional population by the land area of the region. Exhibits 3-4 and 3-5 show population density by traffic survey zones.

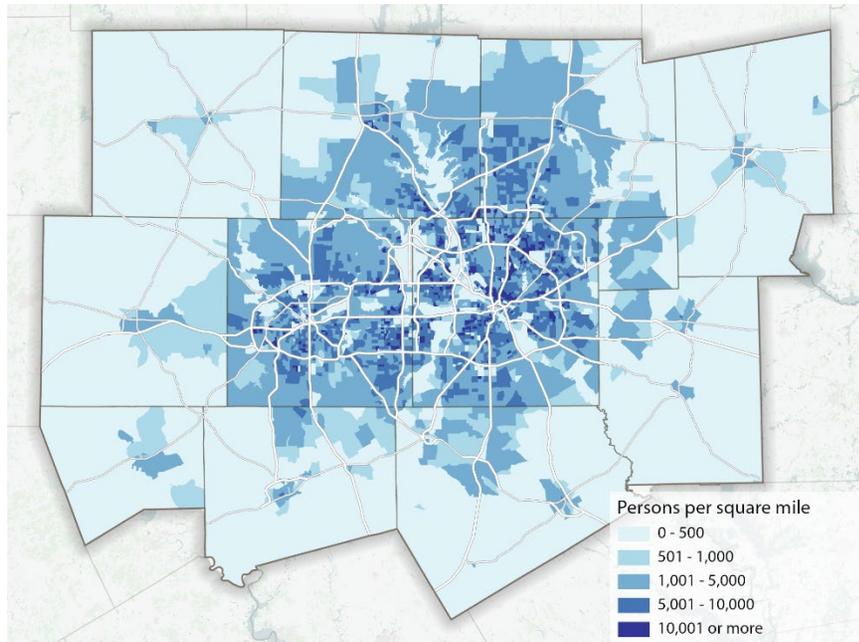
Exhibits 3-4, 3-5, and 3-6 show population density by county and by traffic survey zone between 2023 and 2045. Traffic survey zones are a geographic unit used for transportation planning. They are similar in size to Census block groups.

Exhibit 3-4: Population Density in the 12-County MPA, 2023



Source: NCTCOG 2045 Demographic Forecasts

Exhibit 3-5: Population Density in the 12-County MPA, 2045



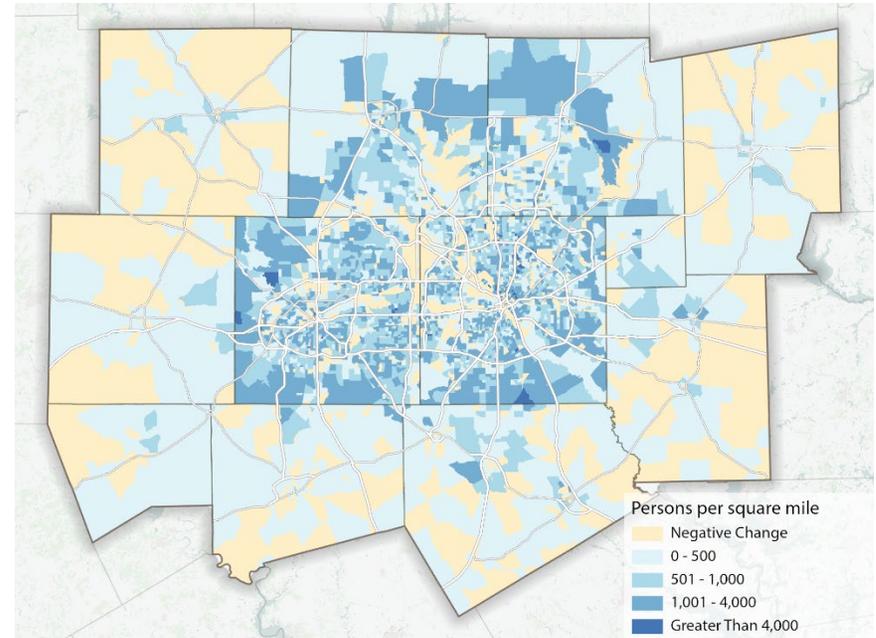
Source: NCTCOG 2045 Demographic Forecasts

Historic Employment Growth

North Central Texas is a major economic, social, and political center of both Texas and the United States. Job growth continues to flourish in the region and state. The North Central Texas region represents 30 percent of the state’s gross domestic product. The region is also home to 22 Fortune 500 companies.⁶ From 2000 to 2019, the number of civilian employees in the region increased by 45 percent, while the number of armed forces employees increased by 22 percent.^{7,8} The transportation system is central in supporting job growth because it allows for the efficient movement of people and goods.

⁶ North Texas Commission, *Profile of North Texas 2021*, <https://www.ntc-dfw.org/north-texas-1>
⁷ 2000 US Census & 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

Exhibit 3-6: Change in Population Density in the 12-County MPA, 2023 to 2045



Source: NCTCOG 2045 Demographic Forecasts

Understanding not only population growth, but employment growth, is critical to transportation planning and to providing the best system to move people to and from jobs.

Employment Forecast

NCTCOG forecasts employment growth to ensure that transportation facilities provide the region’s residents with access to jobs. Employment within the 12-county MPA is projected to increase 42 percent from 5,712,063 jobs in 2023 to 8,111,082 jobs in 2045. During the same period, the employment density in the region is projected to increase from 541 to 859 jobs per square mile.

⁸ Despite these numbers, as a percentage of the region’s total labor force, civilian employment remained stable at 95 percent from 2000 to 2019. Armed Forces employment dropped from 0.15 percent to 0.12 percent during the same period.

Employment growth in the MPA is shown in **Exhibits 3-7, 3-8, 3-9,** and **3-10**. The highest increase in the number of jobs is projected to occur in Dallas County with 1,159,533 new jobs for a growth rate of 48 percent. The second-highest increase is projected to occur in Tarrant County with 723,291 new jobs for a 55 percent increase. Denton County is projected to have the highest rate of employment growth with a 115 percent increase.

Exhibit 3-7: Forecasted Employment Growth by County, 2023 to 2045

County	2023 Employment	2045 Employment	Growth
Denton	476,558	715,813	50%
Collin	726,327	1,068,578	47%
Rockwall	60,366	88,711	47%
Ellis	93,765	136,112	45%
Tarrant	1,441,155	2,047,118	42%
Dallas	2,568,346	3,577,033	39%
Johnson	86,525	120,534	39%
Kaufman	59,470	82,628	39%
Parker	73,860	102,271	38%
Hunt	51,133	70,597	38%
Hood	34,457	47,311	37%
Wise	40,101	54,376	36%
Totals	5,712,063	8,111,082	42%

Source: NCTCOG 2045 Demographic Forecasts

View county performance map in browser 

Growth in the region's employment plays an important role in forecasting population. Regions with job growth retain current residents and attract new ones moving to the area for employment opportunities. Transportation planners use this information to forecast future revenue streams for transportation projects and determine areas that will need additional infrastructure. The region's employment forecasts show that employment opportunities will continue to grow, leading to long-term economic growth and vitality in North Central Texas.

Exhibit 3-8: Employment Density by Traffic Analysis Zone in the 12-County MPA, 2023

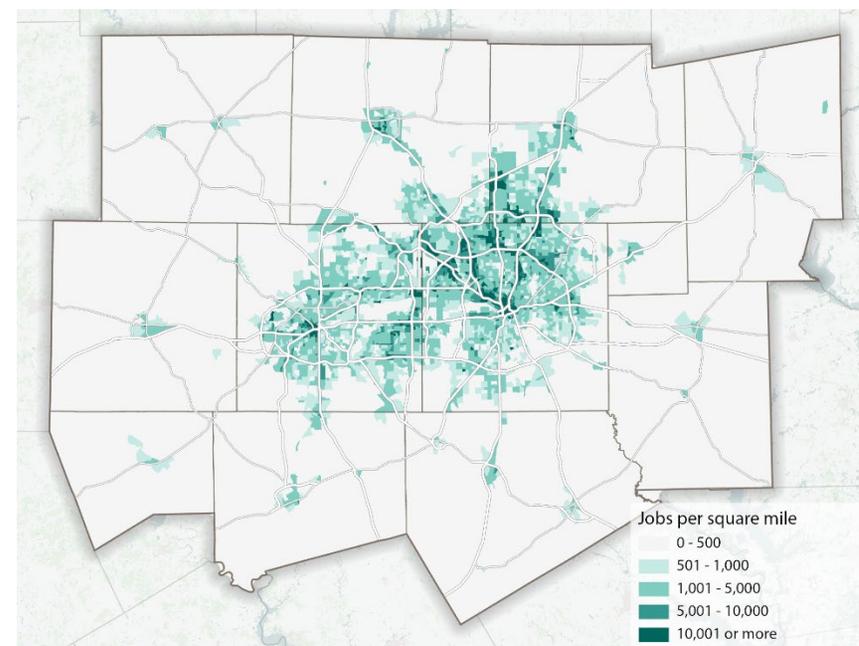


Exhibit 3-9: Employment Density by Traffic Analysis Zone in the 12-County MPA, 2045

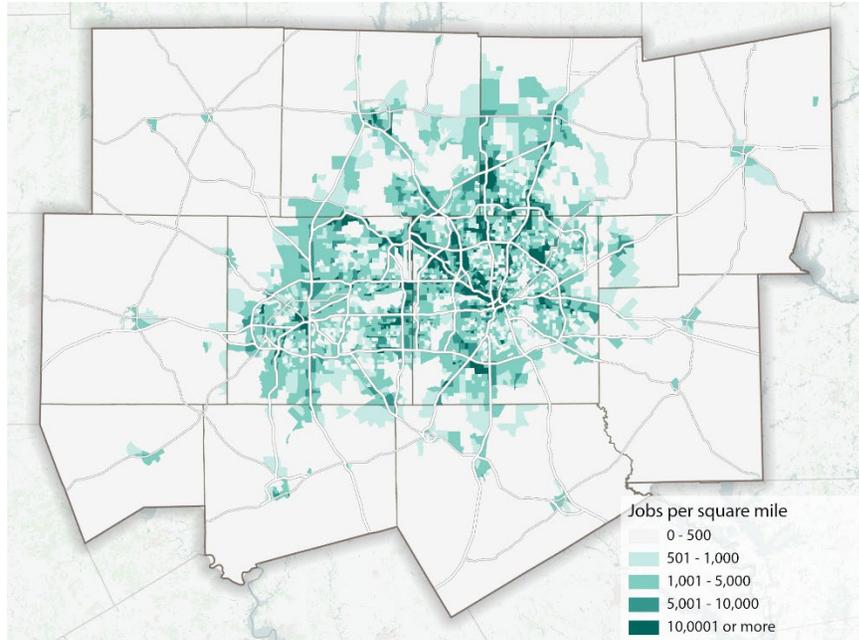
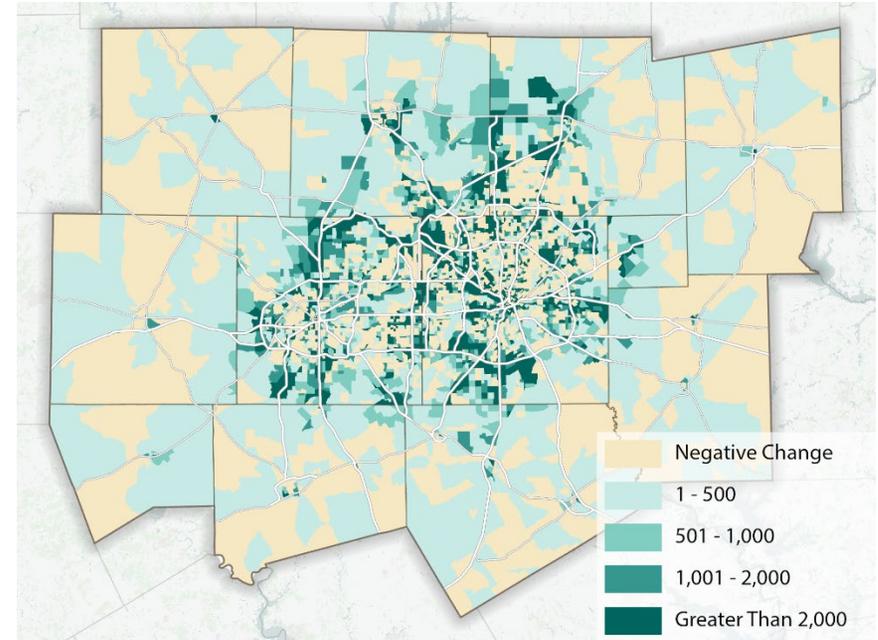


Exhibit 3-10: Change in Employment Density in the 12-County MPA, 2023 to 2045



North Central Texas Population Profile Changes

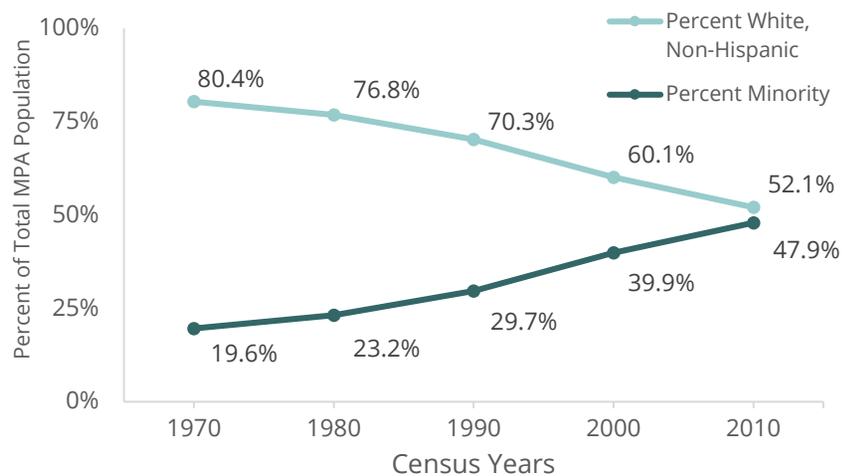
In a region that is demographically diverse, planners must consider how this diversity affects residents' transportation needs. Demographic trends indicate the region's population profile will change over time in terms of race, ethnicity, income, language, and age. The data source for the majority of the following demographic data in the Mobility 2045 Update is the 2019 American Community Survey 5-Year Estimates, the most recent dataset that included all the applicable data at the time the Mobility 2045 Update was developed.

Changes in Race and Ethnicity

Since the 1970s, both the overall population and minority population have increased in the region. NCTCOG defines minority as any person who identifies his or her race as Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, two or more races, or some other race; or who defines his or her ethnicity as Hispanic or Latino. Individuals may identify themselves as one or more races and as ethnically Hispanic or Latino. To avoid double counting people, the total minority population is calculated as the sum of 1) individuals who identify themselves as being a member of any race(s) other than White and who are not Hispanic or Latino, and 2) all individuals who are ethnically Hispanic or Latino, regardless of race. The overall population in the region has increased nearly 160 percent, from 2.5 million people in 1970 to more than 6.4 million in 2010. During the same period, the minority

population has increased more than 550 percent, from 500,000 in 1970 to over 3 million in 2010. **Exhibit 3-11** illustrates changes in the region’s racial and ethnic makeup over time.

Exhibit 3-11: North Central Texas Population Change, 1970 to 2010



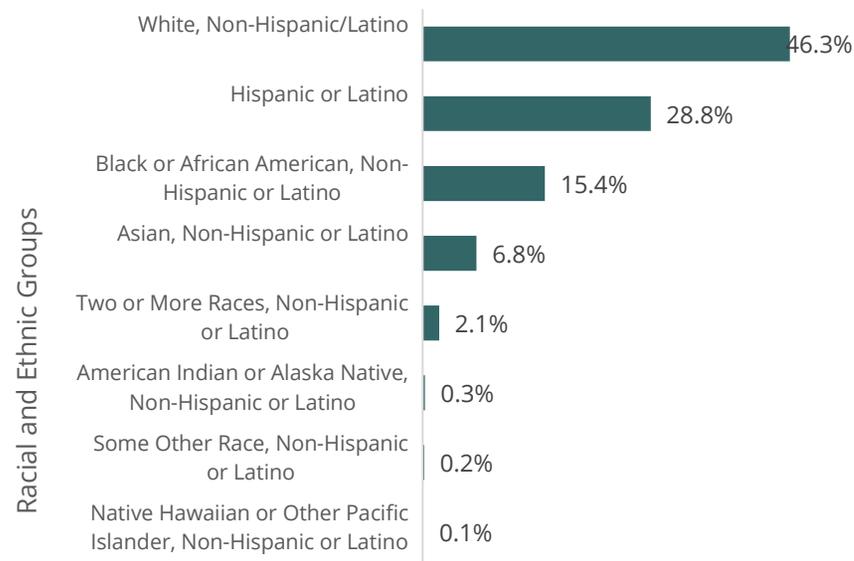
Source: Decennial Census, various years. www.census.gov

Today, the region is demographically diverse with a total minority population of 54 percent. **Exhibit 3-12** illustrates the racial profile of the North Central Texas region between 2015 and 2019.

Historically, the minority population has grown at a faster rate than the overall population. Based on patterns in birth rates and migration, this trend is expected to continue into the future.⁹ A growing number of MPA residents were born in foreign countries. The number of individuals who were born in a foreign country increased by 74 percent from 2000 to 2019. As a result, this demographic group’s share of the region’s total population has increased from 15 percent in 2000 to 19 percent in 2019.¹⁰

⁹ Texas Demographic Center, 2014 Population Projections (0.5 Scenario), <http://txsdc.utsa.edu/Data/TPEPP/Projections/>

Exhibit 3-12: Regional Population by Race and Ethnicity, 2015 to 2019



Percentage of Total Metropolitan Planning Area Population

Source: 2015-2019 American Community Survey 5-Year Estimates. www.census.gov

Changes in Income

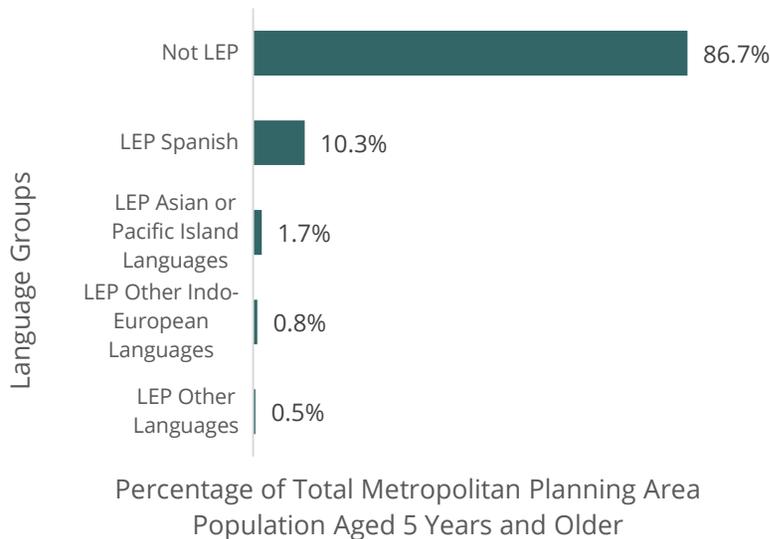
Income is an additional population indicator that must be considered when planning transportation facilities. Individuals or households with lower incomes may not have access to a working vehicle and may rely on other modes of transportation. From 2000 to 2019, the percent of the region’s population that lives below the poverty level increased from 15 percent in 2000 to 16 percent in 2019.

¹⁰ 2000 US Census & 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

Changes in Language

As North Central Texas continues to become a more diverse region, the number of non-English speaking residents will likely increase. People who identify their ability to read, write, speak, or understand English as less than “very well” are considered LEP (limited English proficient). Transportation planners are concerned with how to effectively engage LEP speakers in outreach. According to the 2015-2019 American Community Survey results, the largest LEP language group in North Central Texas is Spanish-speaking individuals, at slightly above 10 percent of the region’s population.¹¹ When all other languages are included, approximately 13 percent of the regional population has a limited ability to read, write, speak, or understand English. **Exhibit 3-13** represents the percentage of LEP individuals by language group in the region.

Exhibit 3-13: Limited English Proficiency by Language Group, 2015 to 2019



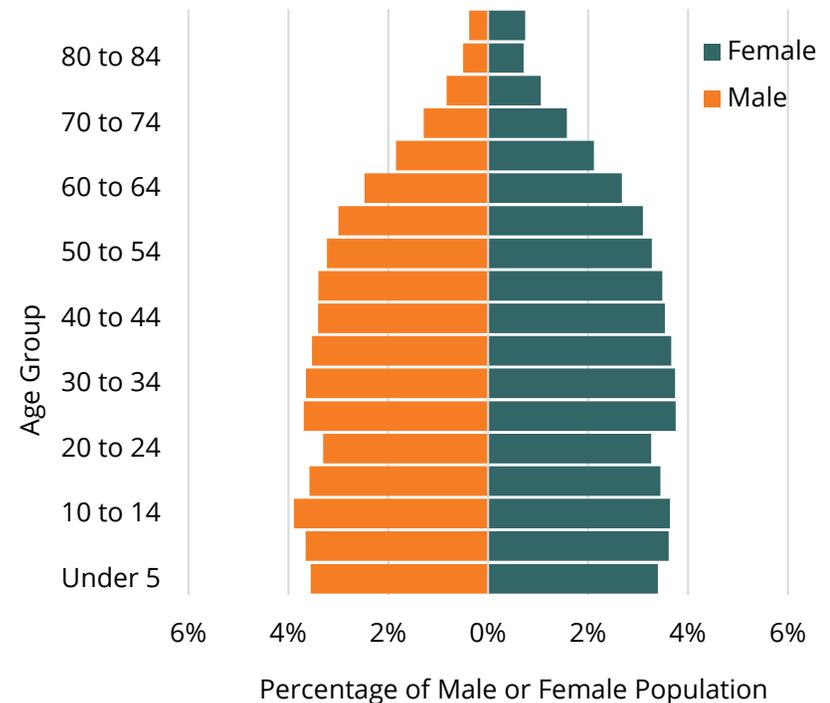
Source: 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

¹¹ In calculating a language group’s share of the regional population, only individuals aged 5 and older are counted.

Changes in Age

Changes in age also are important for planners to consider, because different age groups can have different transportation needs. As people age, their travel behavior, preferences for housing location, and service needs may change. **Exhibit 3-14** represents the age profile of North Central Texans for the years 2015 to 2019. North Central Texas is aging. The share of population aged 55 and older has grown from 15 percent in 2000 to 23 percent in 2019, amounting to an increase of nearly 1 million people.

Exhibit 3-14: Regional Population by Age and Sex, 2015 to 2019



Source: 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

Cultural Trends

NCTCOG strives to understand the current and future demographics of the region to provide an effective transportation system that meets the needs of a diverse region. Planners must understand the region's demographics to effectively engage the public or to understand how people travel. Current trends, historical Census data, population projections, and economic factors are used to inform decision making. Cultural changes are also important to consider when developing infrastructure recommendations.

National trends indicate that residents may be changing their preferences concerning where they live and work; they also show that young people are delaying driving. Although these trends are not as prevalent in North Central Texas as elsewhere, the trends will likely have some impact between now and 2045. The cultural trends discussed below have a direct or indirect impact on how residents may utilize the regional transportation system now and in the future.

Broadband Internet

The internet continues to play a greater role over time in the lives of North Central Texans. Access to broadband internet enables life-essential opportunities and connections such as for work, education, healthcare, social interaction, and even access to social support services like unemployment benefits, and healthy food. For many, internet access is no longer optional, but essential for their everyday lives.

Increasingly, service providers are assuming people have access to the internet and are migrating to online platforms. **Exhibit 3-15** shows that a majority of households (86 percent) in Dallas-Fort Worth do have access to the internet; however, as seen in **Exhibit 3-16**, many households (11 percent) only have a cellular data plan, which may have implications for access.

Exhibit 3-15: Household Internet Access for the North Central Texas Region

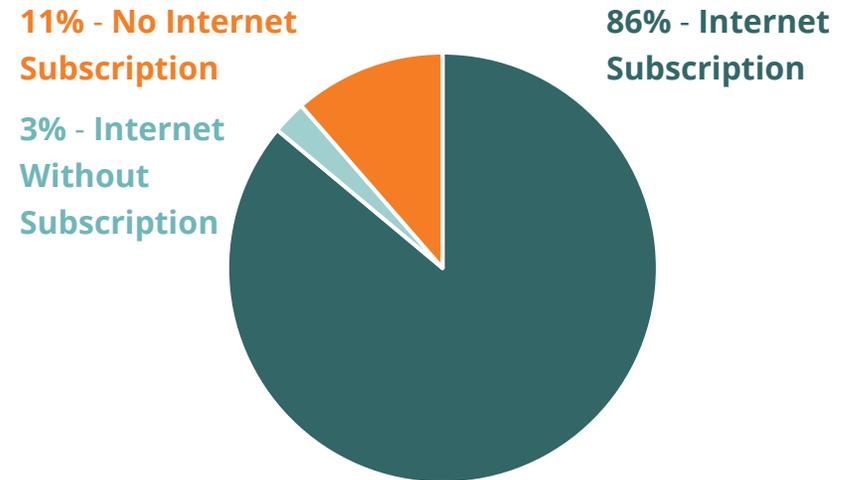
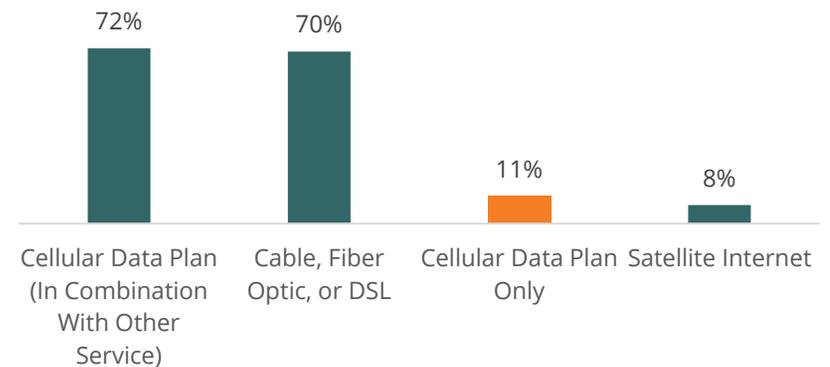


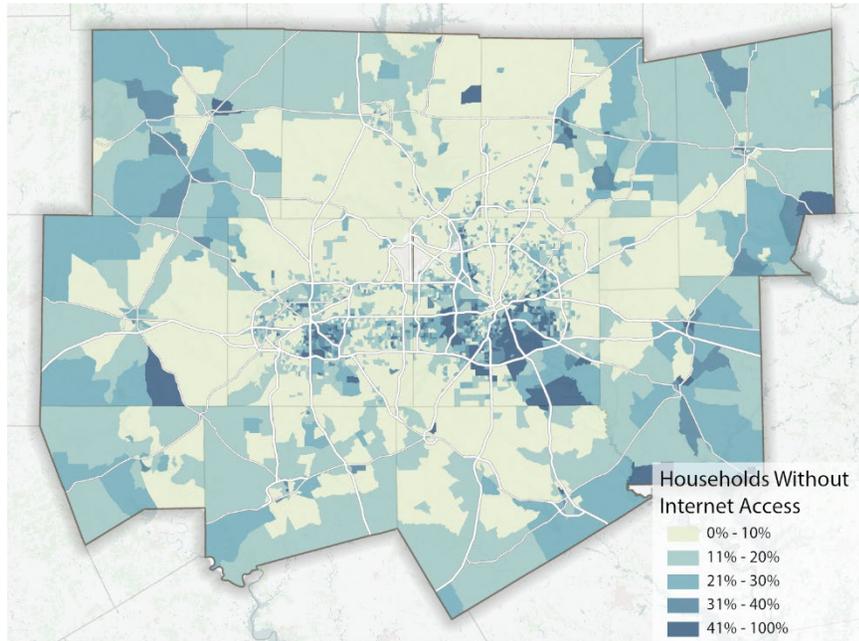
Exhibit 3-16: Types of Internet Service for Households with Access



Source: 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

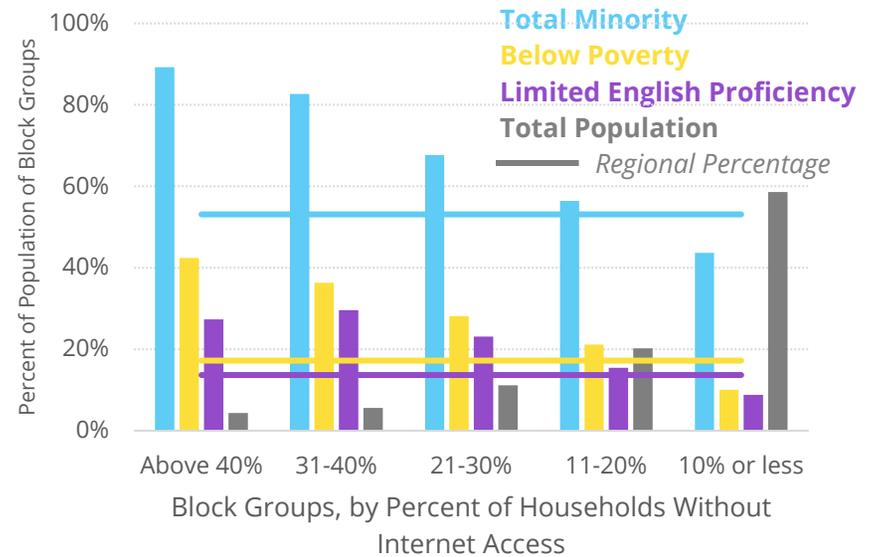
In addition to there being many households with limited to no internet access, **Exhibits 3-17** and **3-18** reveal further information about the demographics of those households.

Exhibit 3-17: Percent of Households Without Internet Access by Block Group



Source: 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

Exhibit 3-18: Demographics of Block Groups in Which Percent of Households Do Not Have Internet Access at Home



Source: 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

According to Census data, the 11 percent of households without internet access are overwhelmingly in areas with a high percentage of minority populations, lower incomes, and/or limited English proficiency. This information should be taken into consideration when doing public outreach and planning for projects and programs that involve web- or app-based communication or services, like transit services.

More information on broadband internet infrastructure, and its uses for transportation, can be found in the **Operational Efficiency** and **Transportation Technology** chapters.

Increase in Telecommuting

A report by the US Census Bureau found the percentage of US workers who worked at least one day a week from home grew from 7 percent to 9.5 percent between 1997 and 2010. The percentage of US workers who worked the majority of their days from home increased from 3.6 percent to 4.3 percent between 2005 and 2010.¹² In the North Central Texas region, the percentage of workers who worked the majority of their days from home grew from 4.2 percent in 2010 to 5.8 percent in 2019.¹³ Telecommuting can reduce demand on the transportation system and decrease the severity of peak-hour congestion, but requires reliable, affordable high-speed internet connections.

Due to the COVID-19 pandemic, many businesses ordered their employees to work from home. According to the Census Bureau, more than a third of US households reported working from home more frequently than before the pandemic, but the percentage who made the switch varied widely across sociodemographic groups.¹⁴ Specifically, telecommuting increased more among households that were higher income and better educated. It remains to be seen how the pandemic will impact transportation into the future. For more information on telecommuting, see the **Travel Demand Management** section of the **Operational Efficiency** chapter.

Preferences of the Baby Boomer Generation

Baby boomers were born approximately between 1947 and 1965.¹⁵ A 2015 national survey by the Urban Land Institute found that 39 percent of baby boomers currently live in rural or small towns, and the remainder are evenly split between suburbs and cities. When asked about location preferences, 51 percent of baby boomers said

they wanted to live in a rural or small town, 24 percent were attracted to the suburbs, and 22 percent preferred cities. However, these location preferences may contrast with quality-of-life preferences baby boomers also identified: 49 percent of baby boomers prioritized walkability and 49 percent would like to live in a place where they wouldn't need to use a car very often.¹⁶ Researchers who compared national Census data to birth and death records found that members of the baby boomer generation left urban counties between 2000 and 2010. The majority of these baby boomers migrated to non-metropolitan counties that featured recreational opportunities and scenic amenities. Dallas County experienced a net loss of baby boomers between 2000 and 2010, while Tarrant County showed a small net increase of younger baby boomers. Rockwall, Kaufman, and Hood counties saw the greatest increase in baby boomers during that decade.¹⁷

Preferences of the Millennial Generation

The millennial generation includes people born approximately between 1979 and 1997.¹⁸

A national study by the Federal Highway Administration found that the number of vehicle miles traveled by 16- to 30-year-olds fell in 2009 compared with 1995 and 2001. The vehicle miles traveled by young people in 2009 were lower than the miles traveled by other age groups that year. However, economic factors, including the recession, may have been responsible for some of this decrease.¹⁹ In the Dallas-Fort Worth-Arlington Metropolitan Statistical Area, Census data show the percent of workers aged 18 to 34 who carpooled or drove a car, truck, or van to work remained relatively constant

¹² US Census Bureau, 2012, *Home-Based Workers in the United States: 2010*, www.census.gov

¹³ 2006-2010 & 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

¹⁴ US Census Bureau, 2021, *Those Who Switched to Telework Have Higher Income, Education and Better Health*, www.census.gov

¹⁵ Data sources vary when identifying the birth years of baby boomers

¹⁶ Urban Land Institute, 2015, *America in 2015*, <https://americas.uli.org>

¹⁷ University of Wisconsin-Madison Applied Population Laboratory's 2013 Age-Specific Net Migration Estimates for US Counties, 1950-2010

¹⁸ Data sources vary when identifying the birth years of the millennial generation

¹⁹ Federal Highway Administration, *The Next Generation of Travel: Research, Analysis and Scenario Development*, https://www.fhwa.dot.gov/policy/otps/nextgen_https_scan.cfm

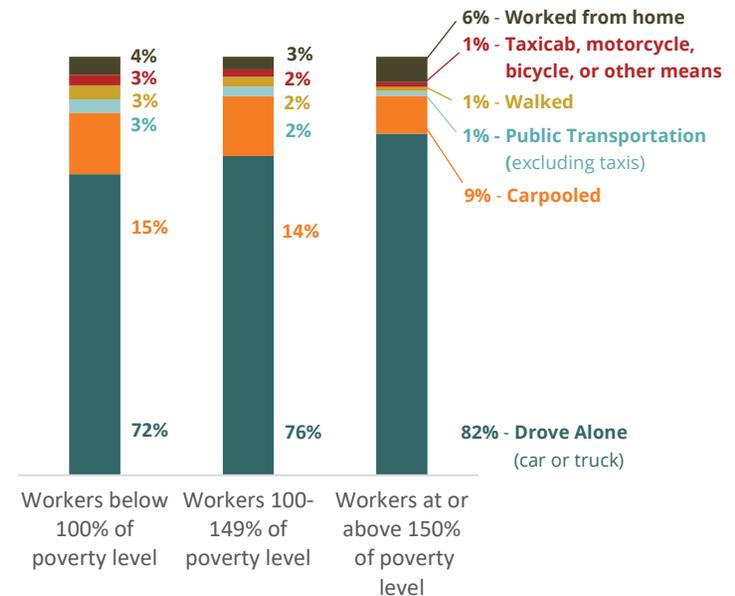
between 1980 and 2013 (ranging from 91.5 percent to 92.4 percent).²⁰

A 2015 national survey conducted by the Urban Land Institute found that most millennials (46 percent) lived in cities, 24 percent lived in suburbs, and 30 percent lived in rural or small towns. Cities were millennials' most preferred location (37 percent) according to the survey, followed by rural or small towns (32 percent), and lastly suburbs (29 percent). Fifty-four percent of millennials considered walkability a high priority in choosing a place to live.²¹ In a 2014 survey by the American Planning Association, millennials ranked metropolitan features, including schools, transit, and safe streets, as their third-highest consideration when choosing a place to live, below the cost of housing and transportation, and below jobs and business growth.²² These national trends conflict with the high levels of car dependency in the Dallas-Fort Worth-Arlington Metropolitan Statistical Area.

Relationship between Income and Mode of Travel

Studies have demonstrated that personal and household income can influence choice of transportation mode. Typically, those with higher incomes more frequently choose to travel by private car.²³ While most North Central Texas residents drive alone to work, Census data suggests that mode choice does vary by income group, as shown in **Exhibit 3-19**. Carpooling is more common among workers with incomes below 150 percent of poverty level. As income decreases, an increasing number of workers choose public transportation, walking, taxis, motorcycles, bicycles, and other modes.

Exhibit 3-19: Mode of Travel to Work by Income in the Metropolitan Planning Area, 2015 to 2019



Source: 2015-2019 American Community Survey 5-Year Estimates, www.census.gov

²⁰ US Census Bureau, Social Explorer, & Minnesota Population Center, *Young Adults Then and Now*, <https://census.socialexplorer.com/young-adults/#/>

²¹ Urban Land Institute, 2015, *America in 2015*, <https://americas.uli.org>

²² American Planning Association, 2014, *Investing in Place*, www.planning.org

²³ National Center for Sustainable Transportation, 2016, *What Affects U.S. Passenger Travel? Current Trends and Future Perspectives*, <https://ncst.ucdavis.edu>

Summary

Regional population and employment trends and forecasts analyze where residents live, work, and carry out leisure activities, and predict where residents will do these things in the future. In a region that is demographically diverse, planners must consider how this diversity affects residents' transportation needs. Demographic trends indicate the region's population profile will change over time in terms of race, ethnicity, income, language, and age. Cultural changes are also important to consider when developing infrastructure recommendations. Work patterns and generational preferences play a role in people's decisions on where to live and work.

The **Social Considerations** appendix contains more information on the regional demographic forecast used in the development of this plan.

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3. Social Considerations: Nondiscrimination Efforts

Introduction

NCTCOG (North Central Texas Council of Governments) and the Regional Transportation Council are committed to providing an equitable transportation system for all residents. Throughout the development of the Mobility 2045 Update, nondiscrimination and environmental justice principles were incorporated so no person is excluded from participation in, denied benefits of, or discriminated against in planning efforts. NCTCOG seeks to understand the impacts of programs and activities on the region and environmental justice populations through assessment, analysis, and outreach efforts. NCTCOG holds nondiscrimination as a core principle in all efforts, including transportation planning.

Mobility 2045 Update Policies

The Mobility 2045 Update supports the following nondiscrimination and public involvement policies:

EJ3-001: Evaluate the benefits and burdens of transportation policies, programs, and plans to prevent disparate impacts and improve the decision-making process, resulting in a more equitable system.

EJ3-002: Balance transportation investment across the region to provide equitable improvements.

EJ3-003: Based on meaningful community input, plan for and invest in projects that proactively address racial equity and barriers to opportunity or redress prior inequities and barriers to opportunity.

EJ3-004: Identify and support transportation solutions to address health disparities in underserved communities, including solutions that improve access to healthy food and medical care.

PI3-001: Meet federal and state requirements to ensure all individuals have full and fair access to provide input on the transportation decision-making process.

PI3-002: Demonstrate explicit consideration and response to the public input received.

PI3-003: Use strategic outreach and communication efforts to seek out and consider the needs of those traditionally underserved by the transportation planning process.

PI3-004: Enhance visualization of transportation policies, programs, and projects.

PI3-005: Provide education to the public and encourage input and engagement from all residents on the transportation system and the transportation decision-making process.

Innovative Technology and Equitable Transportation

Innovative technology may address transportation challenges faced by protected communities. NCTCOG will study and seek to implement transportation solutions via the internet, autonomous vehicles, safety technology, and other advanced technologies. Challenges that could be addressed include, but are not limited to:

- Access to healthy food, medical care, education, and jobs
- Fatalities and injuries for users of active transportation
- Accessibility for people with disabilities

Legal Authority

Several laws and regulations guide NCTCOG's Nondiscrimination/Environmental Justice Program. The first piece of nondiscrimination legislation that shapes NCTCOG's efforts is Title VI of the Civil Rights Act of 1964. Title VI states that *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from*

participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” Title VI holds all agencies that receive federal financial assistance accountable for their actions and mandates those agencies ensure their policies and practices are not discriminatory in nature.

The Environmental Justice Movement, as it is known today, started in the early 1980s when low-income and minority populations began to protest the siting of toxic waste landfills in their neighborhoods. These efforts culminated in the signing of EO (Executive Order) 12898 in 1994, which mandated federal agencies incorporate environmental justice principles into their activities. The Federal Highway Administration identifies three fundamental principles related to transportation and environmental justice.

Under federal law, agencies must incorporate environmental justice into their activities. The three fundamental principles at the core of environmental justice are to:²⁴

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

EO 13985 (Racial Equity), signed in 2021, directs federal agencies to “pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent

poverty and inequality.” The order includes individuals who belong to marginalized communities, defined in the order as “people of color, religious minorities, LGBTQ+ persons, people with disabilities, people who live in rural areas, and people otherwise adversely affected by persistent poverty and inequality.”²⁵ Federal regulations are still being created to conform to this executive order. NCTCOG’s Transportation Department is committed to abiding by the regulations that will follow from this order.

EO 13990 (Public Health & Climate Crisis), also signed in 2021, requires all agencies to review and address previous actions that conflict with principles of environmental justice such as improving public health, protecting the environment, ensuring access to clean air and water, limiting exposure to dangerous chemicals and pesticides, holding polluters accountable, reducing greenhouse gas emissions, bolstering resilience to impacts of climate change, restoring and expanding national treasures and monuments, and prioritizing environmental justice and the creation of jobs to deliver on these goals. It also directs agencies to account for the “social cost” of carbon, nitrous oxide, and methane emissions to monetize damages associated with incremental increases in greenhouse gas emissions.²⁶ As with EO 13985, the NCTCOG Transportation

Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with regard to the development and implementation of plans, policies, and programs.

²⁴ Federal Highway Administration Environmental Justice Reference Guide, April 1, 2015, <https://www.transportation.gov/transportation-policy/environmental-justice/environmental-justice-strategy>

²⁵ Federal Register, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government, [https://www.federalregister.gov/documents/2021/01/25/2021-](https://www.federalregister.gov/documents/2021/01/25/2021-01753/advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government)

[01753/advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government](https://www.federalregister.gov/documents/2021/01/25/2021-01753/advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government)

²⁶ Federal Register, Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis, <https://www.federalregister.gov/documents/2021/01/25/2021-01765/protecting-public-health-and-the-environment-and-restoring-science-to-tackle-the-climate-crisis>

Department is committed to following regulations developed in response to EO 13990.

Finally, EO 14008 (Tackling the Climate Crisis at Home and Abroad), also was signed in 2021. This executive order reiterates the call for environmental justice, particularly related to climate change. The order includes the Justice40 initiative, which calls for 40 percent of the benefits of certain federal investments to flow to disadvantaged communities. Investments relevant to the transportation sector include clean energy and energy efficiency; clean transit; training and workforce development; and the remediation and reduction of legacy pollution. As with other executive orders signed in 2021, the NCTCOG Transportation Department is committed to abiding by the regulations that will follow from this order.

NCTCOG seeks, at a minimum, to meet all state and federal regulations relating to nondiscrimination; however, it is the goal of the agency to go above and beyond basic requirements to create a transportation system that is beneficial to all residents of the region. The following objectives guided the creation of the Mobility 2045 Update:

- Encourage community participation in the development of the Mobility 2045 Update, including traditionally underserved communities.
- Support data gathering and analysis of projects and programs to identify any potentially negative social, economic, health, or environmental impacts on communities.
- Seek to mitigate disproportionately high and adverse human health and environmental effects when identified through analysis or public comment.

These goals are a reflection of NCTCOG's continual efforts to serve all members of the community throughout the transportation planning process.

Integrating Nondiscrimination Principles into the Planning Process

Nondiscrimination is an integral concern while planning and developing projects. NCTCOG strives to address the needs of protected populations (low-income and minority individuals) and assess the impacts of activities throughout the span of a project, from planning to implementation. Understanding how populations utilize the transportation system, coupled with the knowledge of demographic trends, helps planners design a system that will accommodate current and future needs.

NCTCOG recognizes that some federally recognized tribal nations have historical and current interests in the region. NCTCOG endeavors to understand and address those interests through distinct processes that respect tribal nations' sovereignty and the government-to-government relationship.

NCTCOG's efforts to integrate nondiscrimination principles during planning involve three main components:

- **Assessment:** Identify the location of protected populations in the region. This serves as the first step in identifying potential impacts to protected populations.
- **Analysis:** Analyze the potential impacts of any project, policy, plan, or program recommendation. Staff should identify any disparate impacts of its decisions in the short- or long-term future.
- **Outreach:** Involve all population groups in plans or processes.

NCTCOG's Title VI Program documents all nondiscrimination efforts the department undertakes. This document can be found at www.nctcog.org/ej. The following discussion and analysis focus on specific efforts to support nondiscrimination in all transportation planning programs, policies, and activities.

Assessment: Identifying Protected Populations

EO 12898 states that agencies must collect, maintain, and analyze information on environmental justice populations located near sites that may have a substantial environmental, health, or economic effect on nearby populations. The magnitude and scope of Mobility 2045 Update’s recommendations require population patterns of the entire region be evaluated.

The first step in the process is to identify where the region’s low-income and minority populations are located. These federally designated populations are referred to as environmental justice or protected populations and are defined in **Exhibit 3-20**.

Exhibit 3-20: Federally Designated Environmental Justice Population Definitions

Population	Definition
Black or African American Race	A person having origins in any of the Black racial groups of Africa.
American Indian or Alaska Native Race	A person having origins in any of the original peoples of North and South America who maintain tribal affiliation or community attachment.
Asian Race	A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian Subcontinent.
Native Hawaiian or Other Pacific Islander Race	A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
Hispanic or Latino Ethnicity	A person of Mexican, Puerto Rican, Cuban, Central or South America, or other Spanish culture or origin regardless of race.
Some Other Race ²⁷	A person belonging to a race other than White, Black or African American, American Indian or Alaska Native, Asian, or Native Hawaiian or Other Pacific Islander.
Two or More Races ²⁷	A person belonging to two or more of the following racial categories: White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, or Some Other Race.
Low-Income	A person whose household income is below the poverty line as determined by the US Department of Health and Human Services.

²⁷ The populations Some Other Race and Two or More Races are not identified by Federal Highway Administration Order 6640.23A as minority populations, but NCTCOG includes these groups to

meet the spirit of protecting groups who may have been historically discriminated against as a result of race, color, or national origin.

The following groups also are considered throughout the planning process in order to meet the requirements of Title VI-related statutes and guidance on transportation-disadvantaged groups:

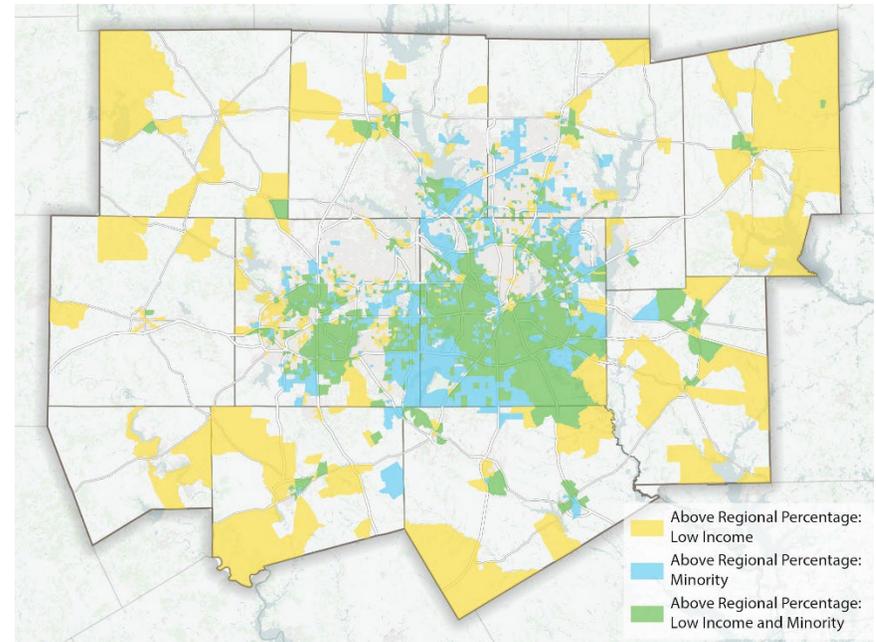
- People aged 65 years and older
- People with disabilities
- People who are limited English proficient
- Female head of household (any female-headed household with children under 18 years old and no husband present)
- Zero-car households

Maps depicting the locations of these populations in the region are found in the **Social Considerations** appendix.

The EJI (Environmental Justice Index) was developed by the North Central Texas Council of Governments to identify Census block groups with concentrations of low-income and/or minority populations for analysis. The resulting map is a starting point for further analysis using additional data provided within the EJI; the Federal Transit Administration states that no threshold should function as a “bright line” to exclude populations from analysis.²⁸ The EJI also is used to examine how recommendations in the Mobility 2045 Update affect protected populations.

Exhibit 3-21 displays the EJI for the North Central Texas 12-county Metropolitan Planning Area. All calculations are based on the 2015-2019 American Community Survey 5-Year Estimates.

Exhibit 3-21: Environmental Justice Index for the 12-County Metropolitan Planning Area



Analysis: Considering Potential Impacts Beyond the Mobility 2045 Update

Through its programs and policies, NCTCOG’s Transportation Department evaluates whether environmental justice and nondiscrimination principles are met for protected populations and transportation-disadvantaged groups. This section provides a broad overview of NCTCOG initiatives that are independent of the Mobility 2045 Update:

- Following the development of the Metropolitan Transportation Plan, NCTCOG’s Transportation Department develops a Regional Tolling Analysis for use in NEPA (National Environmental Policy Act) investigations if the plan causes significant changes to occur

²⁸ Federal Transit Administration, Environmental Justice FAQs, <https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/environmental-justice/environmental-justice-faqs>

to increase toll roads from the previous analysis. The Regional Tolling Analysis evaluates the effects of the proposed expansion of the regional priced facility system on environmental justice populations.

- The department works toward equity in transit by providing planning tools and guidance for local municipalities, advancing regional research efforts, and administering federally funded programs that improve transportation options for older adults, individuals with disabilities, and low-income individuals.
- The department's Sustainable Development Program incorporates equity principles into selection criteria for active transportation, Complete Streets, and transit access projects.
- NCTCOG likewise ensures that equity considerations are integrated into the regional Travel Demand Model, air quality technology improvement projects, periodic reviews of how transportation funding is geographically distributed within the region, and project-level environmental reviews conducted in accordance with NEPA.
- The department studies transportation needs of protected populations and ways in which transportation solutions can address these needs, including access to essential goods and services such as fresh food and medical services.

NCTCOG strives to enhance its equity analysis methodology and nondiscrimination efforts by engaging in peer reviews with other Metropolitan Planning Organizations and Departments of Transportation.

Outreach: Engaging Community Members

Equity considerations play an integral role in NCTCOG's efforts to continuously improve the outreach methods outlined in its Public

Participation Plan and Language Assistance Plan. For example, the Transportation Department has translated several of its written publications, expanded its media list to reflect the region's diversity, and conducted outreach at community events like back-to-school and health fairs. These efforts extend beyond the Metropolitan Transportation Plan to other departmental programs and projects. Targeted outreach to transportation-disadvantaged groups and protected populations is a critical component of the department's *Access North Texas* public transportation plan and transportation corridor studies.

More information on outreach efforts can be found in the **Public Participation Requirements** section of this chapter. More information on *Access North Texas* can be found in the **Public Transportation** section of the **Mobility Options** chapter.

Regional Nondiscrimination Analysis

Nondiscrimination efforts are considered at multiple levels throughout the transportation planning and project development process, from the long-range plan to project implementation. Analysis is conducted at four levels to ensure no one population bears undue burdens of the transportation system and to provide a greater understanding of how the project will impact a community on a macro and micro level.

Projects proceed through the four levels of environmental justice analysis shown in **Exhibit 3-22**. This section of the Mobility 2045 Update analyzes environmental justice and equity at the Metropolitan Transportation Plan level.

Exhibit 3-22: Levels of Environmental Justice and/or Equity Analysis during Transportation Planning and Project Development Process

Analysis	Metropolitan Transportation Plan (Mobility 2045 Update)	Regional Priced Facilities	National Environmental Policy Act	Construction/Project Implementation
Scope	All projects proposed in the Mobility 2045 Update on a regional level	All new priced facilities proposed in the Mobility 2045 Update on a regional level	Project/corridor-specific analysis	Disadvantaged Business Enterprise and contractor requirements
Results	Impacts of proposed projects on regional mobility and accessibility	Regional impacts on communities with the addition of all priced facilities	Localized impacts on a community due to the construction and operation of a project, including noise and air quality concerns	Job Opportunities Program, enhancing environmental justice community involvement and outreach

An equity analysis was conducted on three components of the Mobility 2045 Update:

- The prioritization of roadway and transit projects to be recommended in the plan.
- The potential system-wide impacts of tollways.
- The system-wide performance of roadway and transit projects recommended in the plan.

Project Prioritization: Equity Methodology and Results

NCTCOG applied a nondiscrimination analysis following the project prioritization process described in the **Mobility Options** chapter. Roadway and transit recommendations in the Mobility 2045 Update were analyzed to identify whether their staging, or the timing of their construction, may deny, reduce, or significantly delay the receipt of benefits by minority or low-income populations. No discrimination was found.

The transit stations analyzed included rail, streetcar, and high-intensity bus. Because data on plans for traditional bus routes was not available for all areas, these stations were excluded from the analysis. Some high-intensity bus routes duplicate existing traditional bus routes, but they were included in the analysis because they provide the additional benefit of reduced travel times due to their ability to travel on roadways where congestion is managed through tolls.

The analysis quantified added lane miles and added transit stations for the interim year 2028 and for the plan horizon year of 2045, as compared with 2018. A one-mile travelshed was established for lane miles. A half-mile walkshed was established for transit stations. Added lane miles and added transit stations were overlaid with Census block groups with a concentration of minority, low-income, or limited English proficiency populations using data from the 2015-2019 American Community Survey 5-Year Estimates. However, the locations where concentrations of protected groups reside may change over time; this analysis is unable to project those changes.

For 2026, 2036, and 2045, the majority of added lane miles and added transit stations provide a transportation benefit to areas with concentrations of minority, low-income, or limited English proficient populations (**Exhibit 3-23** and **Exhibit 3-24**). The benefit is greatest in 2026 and 2036, indicating the benefit is not delayed. In 2036, 73 percent of added lane miles are located within the one-mile travelshed for protected groups. Fifty-nine percent of the Metropolitan Planning Area is in a block group considered protected for this analysis. Therefore, 73 percent of added lane miles serve this 59 percent of the region where a concentration of protected populations reside. This comparison holds true for 2045, and for added transit stations in 2026 and 2045.

However, from 2026 to 2045, a decreasing, though still majority, percentage of added lane miles and added transit stations provide a benefit to protected populations. NCTCOG will repeat this analysis in future Metropolitan Transportation Plans to ensure

recommendations do not unintentionally discriminate against protected groups, and do not deny, reduce, or significantly delay the receipt of benefits by minority or low-income populations.

Exhibit 3-23: Project Prioritization Nondiscrimination Analysis of Roadway Lane Miles

Year	Total Lane Mileage	Lane Miles Near Protected Groups		Total Added Lane Miles*		Added Lane Miles Near Protected Groups	
	Number	Number	%	Number	%	Number	%
2023	6,466	5,718	88%	n/a	n/a	n/a	n/a
2026	6,697	5,898	88%	231	100%	179	78%
2036	8,000	6,833	85%	1,534	100%	1,114	73%
2045	8,601	7,206	84%	2,135	100%	1,488	70%

*Roadway projects included as recommendations in the Mobility 2045 Update

Exhibit 3-24: Project Prioritization Nondiscrimination Analysis of Transit Stations

Year	Total Transit Stations	Transit Stations Near Protected Groups		Total Added Transit Stations*		Added Transit Stations Near Protected Groups	
	Number	Number	%	Number	%	Number	%
2023	136	132	97%	n/a	n/a	n/a	n/a
2026	151	146	97%	15	100%	14	93%
2036	169	164	97%	33	100%	32	97%
2045	227	216	95%	91	100%	84	92%

*Stations included as recommendations in the Mobility 2045 Update

Tollways: Equity Methodology and Results

The results of the equity analysis of tollways indicate that implementing the policies, programs, and projects of the Mobility 2045 Update would neither discriminate against nor have disproportionate impacts on protected populations.

For the systemwide tollway and tolled managed lane analysis, the origins of the trips drivers make are estimated and reviewed to determine whether protected populations and nonprotected populations experience similar levels of mobility and accessibility. This analysis is performed for the No-Build (of tolled facilities) scenario versus the Build (including tolled facilities) scenario for the system of toll roads and tolled managed lanes. System-level

performance such as overall congestion, vehicle miles traveled, and speeds are reviewed to determine what regional impacts would occur if the tollways or tolled managed lanes were not constructed. The results of these analyses are shown in **Exhibit 3-25**, which compares travel information for three categories of TSZ (traffic survey zones):

1. The percentage of individuals in the TSZ living in a household below poverty is greater than the region’s percentage of individuals living in a household below poverty.
2. The percentage of individuals in the TSZ belonging to a protected class is greater than the region’s percentage of individuals belonging to a protected class.
3. TSZs that do not meet the requirements of 1 or 2.

For each of these TSZ categories, **Exhibit 3-25** shows the number of jobs within 30 minutes by auto, the average roadway speed in the

zones, and the number of minutes it would take to travel 20 miles from the zones.

As **Exhibit 3-25** shows, a Build scenario of the tolled and tolled managed system would benefit all North Central Texas commuters regardless of TSZ category. A Build scenario of the tolled and tolled managed lane system would result in more jobs within 30 minutes by car, a higher average speed, and shorter times required to travel 20 miles for all commuters regardless of their TSZ category. These results indicate that construction of this toll road and tolled managed lane system creates no disproportionate impacts on protected populations.

Future analyses, including the Regional Tollway Equity Analysis described in **Exhibit 3-25**, will evaluate trips at the corridor level for individual roadway studies in accordance with NEPA.

Exhibit 3-25 Results of Tollways Equity Analysis

	Traffic Survey Zone Category					
	Below Poverty		All Protected Classes		Non-Protected Classes	
	No-Build (of Tolled Facilities)	Build (including Tolled Facilities)	No-Build (of Tolled Facilities)	Build (including Tolled Facilities)	No-Build (of Tolled Facilities)	Build (including Tolled Facilities)
Jobs Within 30 Minutes by Automobile	703,602	719,145	678,491	692,518	392,604	401,481
Average Speed (mph)	24	26	23	25	21	23
Minutes to Travel 20 Miles	50	46	53	49	58	51

Metropolitan Transportation Plan: Regional Nondiscrimination Analysis Methodology

The Mobility 2045 Update has identified \$148.3 billion in transportation projects spread over approximately 9,500 square miles. Because of the magnitude of projects to be analyzed, an

assessment of each project is infeasible. For this reason, the Travel Demand Model is used to perform a regional equity analysis on the entire transportation system proposed in the Mobility 2045 Update.

One goal of the Mobility 2045 Update is to make transportation options more available for people and goods. This is achieved

through enhancing mobility and accessibility. Mobility is the ability for people and goods to travel from one place to another. Mobility can be affected by factors such as design, road capacity, or Intelligent Transportation Systems such as electronic toll collectors and dynamic message signs that inform drivers about traffic conditions. Accessibility describes how well the system provides access to locations and opportunities. Accessibility can be affected by factors such as the cost in time and dollars and the number of modal choices available to reach a location.

Six performance indicators that identify quality-of-life factors affected by accessibility and mobility are used to evaluate Mobility 2045 Update recommendations. These performance indicators are shown in **Exhibit 3-26** and the results of the Mobility 2045 Update evaluation are shown in **Exhibits 3-27** through **3-36**.

Exhibit 3-26: Environmental Justice Performance Indicators

Accessibility	Mobility
<ul style="list-style-type: none"> • Number of jobs accessible within 30 minutes by automobile • Number of jobs accessible within 60 minutes by transit • Population within 30 minutes to university special generators • Population within 15 minutes to hospitals 	<ul style="list-style-type: none"> • Average level of congestion • Average travel time

The Mobility 2045 Update recommendations were evaluated using the established performance indicators and demographic data from the 2015-2019 ACS (American Community Survey) 5-Year Estimates. In 2010, the decennial Census discontinued reporting income data. Moving forward, the NCTCOG EJI and Metropolitan Transportation Plan: Regional Nondiscrimination Analysis Methodology will acquire this data from ACS estimates. The ACS data is based on a sample of the population and, therefore, has a larger margin of error than the

decennial Census data; however, this is the most complete data available for this analysis. More information regarding data considerations can be found at www.census.gov.

The following four steps were used to complete the Equity Analysis for the Mobility 2045 Update:

Step 1. Identified Protected Populations: Traffic survey zones with a percentage of low-income, total minority, or limited English proficiency population above the percentage for the total region were identified as protected. These zones are referred to as the “Aggregate Protected Population” in the results. Traffic survey zones above the regional percentage for any single population listed in **Exhibit 3-20** were also identified as protected. These results are documented in the **Social Considerations** appendix. When a traffic survey zone is included as a protected zone, the entire population of the zone is considered protected for this analysis.

Step 2. Calculated Performance Indicators: Protected traffic survey zones were compared to non-protected traffic survey zones for the identified performance indicators. A detailed description of how the performance indicators were calculated can be found in the **Social Considerations** appendix.

Step 3. Analyzed Network and Demographic Scenarios: The six performance indicators were compared across several scenarios that combined existing or planned transportation networks and current and future demographics:

- **2023 Current Network:** Existing roadway and transit facilities with 2023 population.
- **2045 Build Network:** All roadway and transit facilities recommended in the Mobility 2045 Update with 2045 demographics.
- **2045 No-Build Network:** Existing roadway and transit facilities with 2045 demographics.

- **2045 Priced Facilities No-Build Network:** All roadway and transit facilities recommended in the Mobility 2045 Update, excluding new or expanded priced facilities, and 2045 demographics (results detailed in *Tollways: Equity Methodology and Results* section above).

Step 4. Compared Results: Current, Build, and No-Build scenarios were compared for protected and non-protected populations.

The Current network forms the baseline for assessing the impacts of building the Mobility 2045 Update roadway and transit recommendations. Rerouting current facilities to remedy potential disparities between protected and non-protected groups is not a realistic option; therefore, the Mobility 2045 Update compares the Current and Build scenarios to see the rate at which any disparities are being perpetuated in future plans. Comparing the Current and No-Build scenarios establishes that improvements to the current

Housing and Transportation Affordability in the Metropolitan Planning Area, 2019



The True Costs of Transportation

Most people consider housing costs to be the primary indicator of cost of living. However, transportation costs also contribute to household expenses. The CNT (Center for Neighborhood Technology) created the 'Housing and Transportation Affordability Index' to measure affordability of an area based on the combined cost of housing and transportation. CNT has defined an affordable range for combined housing and transportation costs as consuming no more than 45 percent of household income. Based on the 2015-2019 American Community Survey, CNT estimates the average amount spent on housing and transportation costs in the Metropolitan Planning Area is 49 percent of household income. The graphic to the left shows variation of costs and median household income by county. The affordability threshold is exceeded in every county except Hunt.

With the region's housing prices on the rise, cost pressure on households may intensify. For example, the average sales price for new homes in the Dallas-Irving-Plano metropolitan division increased by almost 4 percent in the 12 months ending in March 2020 when compared with the previous 12 months, according to a [report](#) from the US Department of Housing and Urban Development. Rents increased by the same amount in the same time period. In addition, home prices soared during the COVID-19 pandemic in 2020 and 2021. It remains to be seen whether home prices will stabilize in the coming months or years.

transportation system are essential to accommodate population growth. The results are compared across the different scenarios to provide a complete picture of how changes in the transportation system impact mobility and accessibility in North Central Texas.

Due to the rapid population growth that is forecast to continue through 2045, some of the performance indicators worsen even in the 2045 Build scenario. The primary purpose of the Regional Equity Analysis is to determine whether the recommendations in the plan have a discriminatory or disproportionate or adverse impact on protected groups when compared to non-protected groups. The following discussion summarizes the results of the analysis performance indicators. The **Social Considerations** appendix provides the detailed regional results, including performance indicator outcomes for the aggregate and individual protected populations.

Metropolitan Transportation Plan: Equity Analysis Results

The results of the environmental justice analysis show that even if the Mobility 2045 Update roadway recommendations are built (2045 Build), the transportation system provides protected populations access to 7 percent fewer jobs by car within 30 minutes. This reduction is caused by the increased congestion that results from population growth. However, the results of the analysis show that if the Mobility 2045 Update transit recommendations are built, protected populations will gain access to 39 percent more jobs by transit within 60 minutes. Both protected and non-protected populations are expected to experience a decrease in jobs accessible within 30 minutes by auto, but protected populations are expected to experience less of a decrease. Both groups are expected to experience an increase in the number of jobs accessible within 60 minutes by transit. **Exhibit 3-27** and **Exhibit 3-28** reflect the number of jobs accessible for both protected and non-protected populations between the Current, 2045 Build, and 2045 No-Build scenarios. It is

important to note the analysis does not include demand-response transit services and does not fully reflect the potential expansion of bus routes in the region.

However, if the transportation system remains as it is today, as illustrated by 2045 No-Build, both protected and non-protected groups are expected to experience a decline in the number of jobs accessible by auto. Protected groups will see an increase in jobs accessible by transit, regardless of scenario. This is largely due to an expected employment growth in core areas of the region that are transit accessible.

Exhibit 3-27: Job Access by Auto and Transit, Current to 2045 Build

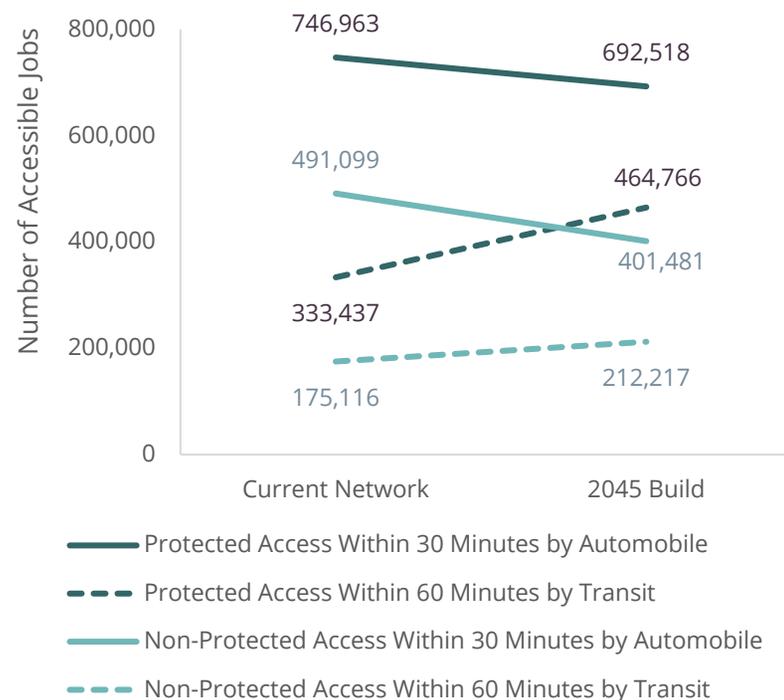
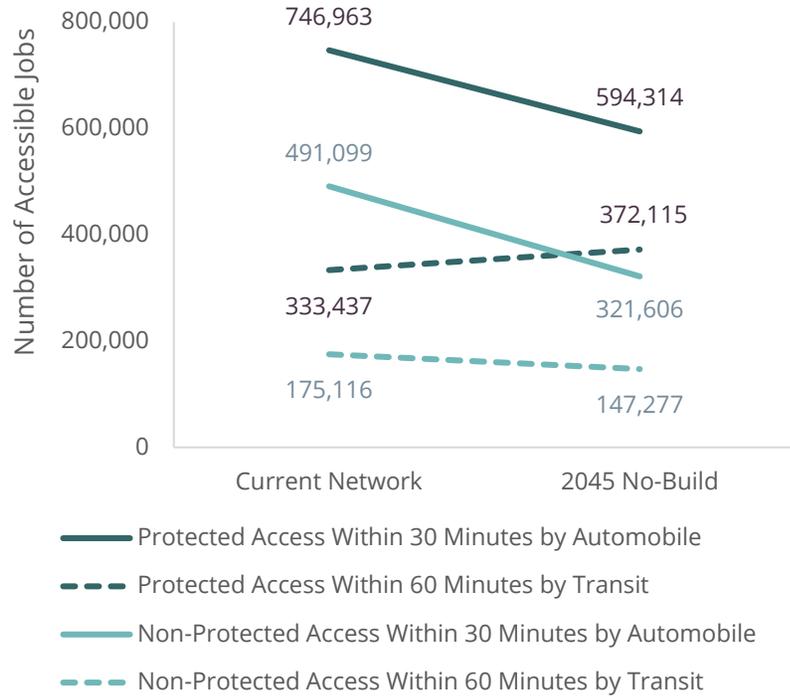


Exhibit 3-28: Job Access by Auto and Transit, Current to 2045 No-Build



The decrease in access to jobs by auto, even with the 2045 Build scenario, can be attributed to increased regional congestion. **Exhibits 3-29 and 3-30** display congestion changes for protected and non-protected populations across the three scenarios. In the Current, 2045 Build, and 2045 No-Build scenarios, the protected populations experience more localized congestion than the non-protected populations. This may be because the majority of protected populations live close to the urban core where congestion tends to be worse.

Exhibit 3-29: Localized Congestion Change, Current to 2045 Build

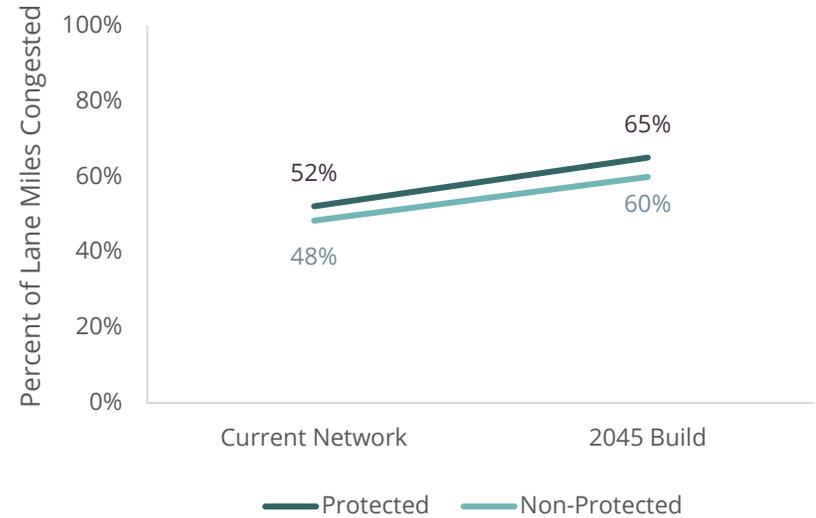
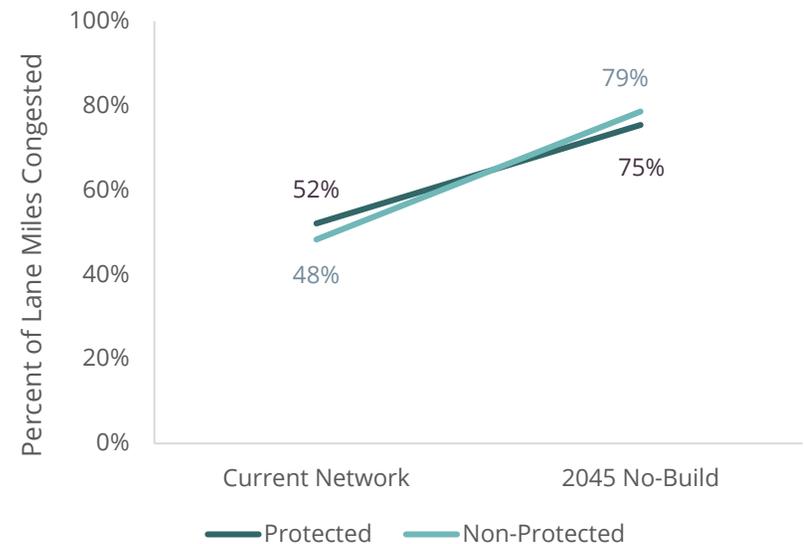


Exhibit 3-30: Localized Congestion Change, Current to 2045 No-Build



With increased congestion, the length of time to travel a set distance increases. To relate the localized congestion displayed above to everyday travel, the average trip time and length for each scenario was determined. An average mile per hour was calculated to determine the time it would take both protected and non-protected populations to travel 20 miles across all three scenarios. Twenty miles was used as the threshold because it represents an average commute length in the Dallas-Fort Worth area.

The results in **Exhibits 3-31** and **3-32** reflect the outcome of this congestion. Both protected and non-protected groups are expected to experience similar increases in the amount of time it takes to travel 20 miles by auto in the 2045 Build scenario. Non-protected groups are expected to experience a larger increase in the 2045 No-Build scenario.

Exhibit 3-31: Average Time in Minutes to Travel 20 Miles by Auto, Current to 2045 Build

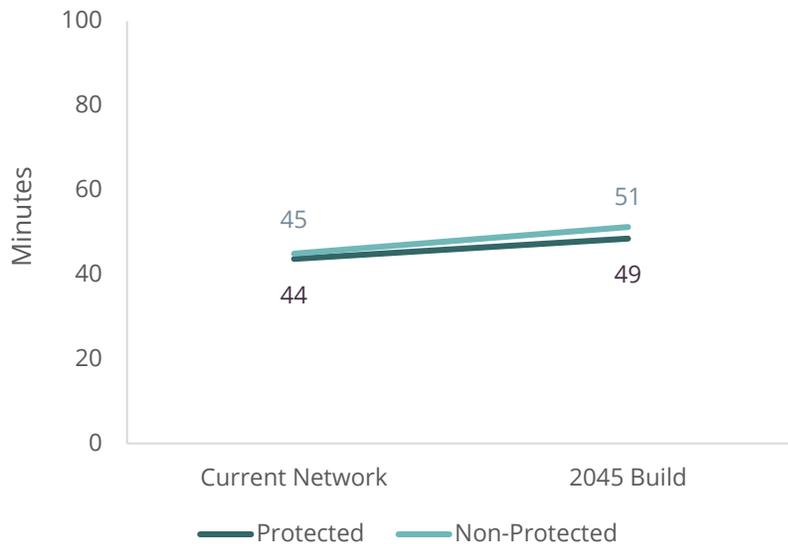
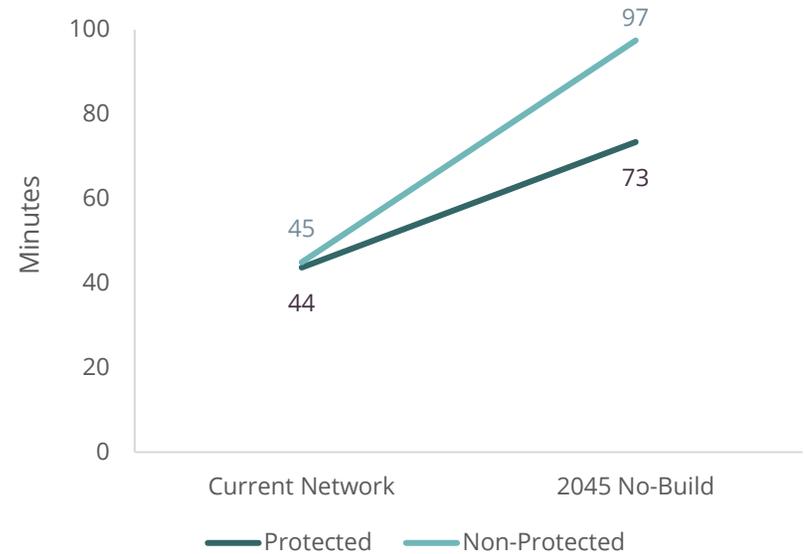


Exhibit 3-32: Average Time in Minutes to Travel 20 Miles by Auto, Current to 2045 No-Build



To determine accessibility to regional attractions, the environmental justice analysis calculated percent of populations residing within 30 minutes of universities by auto and within 15 minutes of hospitals by auto. The lower time threshold of 15 minutes was used for hospitals due to the critical nature of accessing emergency care.

Access to Universities: A greater percentage of the protected population lives within 30 minutes of a university across all scenarios (**Exhibit 3-33** and **Exhibit 3-34**). Both populations remain above 95 percent with the 2045 Build scenario. Both populations see greater declines with the 2045 No-Build scenario, but non-protected populations' access declines at a greater rate.

Exhibit 3-33: Percent of Population within 30 Minutes of a University, Current to 2045 Build

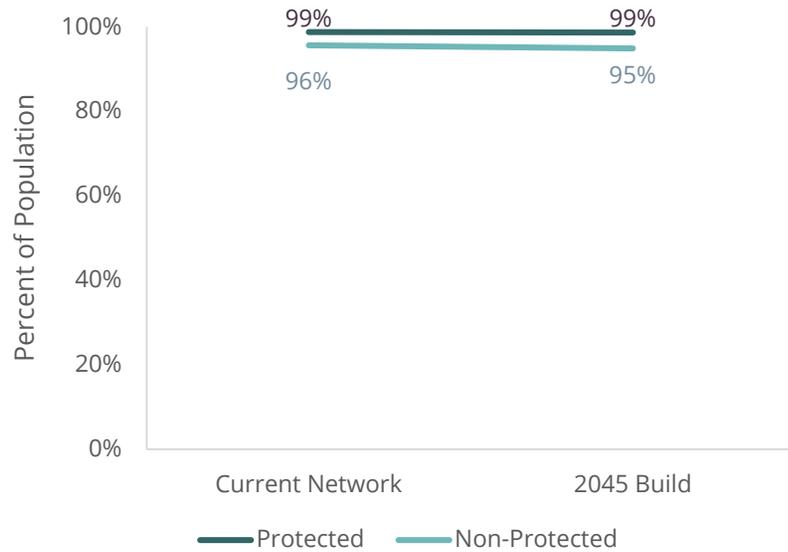
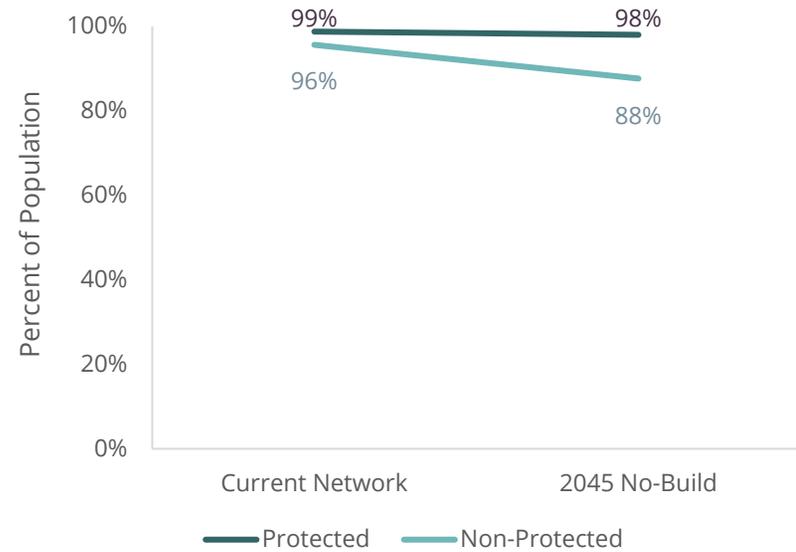


Exhibit 3-34: Percent of Population within 30 Minutes of a University, Current to 2045 No-Build



Access to Hospitals: A greater percentage of the protected population lives within 15 minutes of a hospital across all scenarios (**Exhibit 3-35** and **Exhibit 3-36**). Both populations see a decline with the 2045 Build scenario, and less than 70 percent of the protected population remains within the 15-minute threshold. Both populations see greater declines with the 2045 No-Build scenario, but non-protected populations' access declines at a greater rate. With both the 2045 Build and 2045 No-Build, the percent of population within the 15-minute threshold declines at a higher rate for non-protected populations than for protected populations.

Exhibit 3-35: Percent of Population within 15 Minutes of a Hospital, Current to 2045 Build

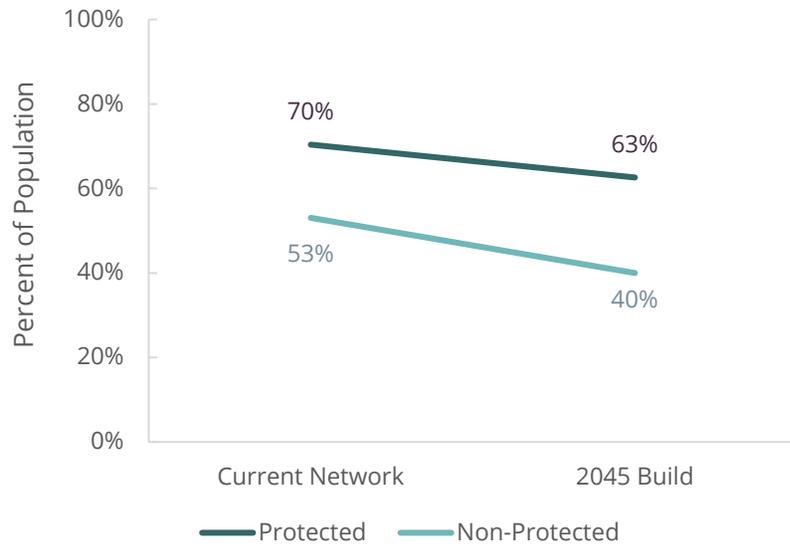
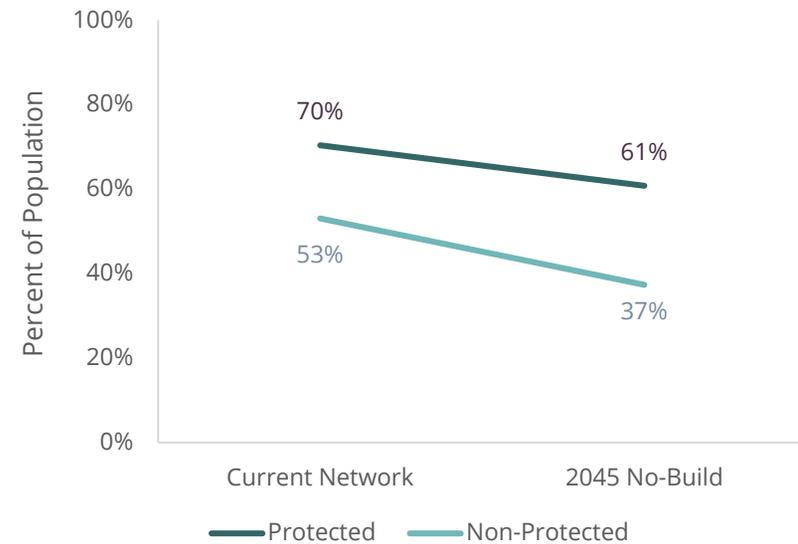


Exhibit 3-36: Percent of Population within 15 Minutes of a Hospital, Current to 2045 No-Build



Summary

As a whole, the Mobility 2045 Update roadway and transit recommendations do not have disparate impacts on protected populations. **Exhibit 3-37** illustrates the overall results of the three main performance indicators for the aggregated protected population compared with the non-protected population. Because expected population growth will increase congestion, overall mobility and accessibility by auto decrease in the 2045 Build scenario, but they decrease at a slower rate for protected populations. The Mobility 2045 Update’s multimodal recommendations contribute to

offsetting these declines. The plan’s transit recommendations yield increased accessibility. While this access is expected to increase at a greater rate for non-protected populations, protected populations are expected to continue to have access to more jobs by transit than non-protected populations. The North Central Texas Council of Governments will continue to analyze accessibility in future Metropolitan Transportation Plans to ensure disparate impacts do not develop. The **Social Considerations** appendix contains the complete methodology and results for all protected populations for the equity analysis.

Exhibit 3-37: Equity Analysis Performance Results for Equity Aggregate Protected Population Compared to Non-Protected Population

Performance Measure	Population	2023 Current Network	2045 Update Build	2045 Update No-Build	Percent Change (Current vs Build)	Percent Change (Current vs No-Build)
Protected Population vs Non-Protected Population	Protected	4,590,206	5,900,776	5,900,776		
	Non-Protected	3,562,749	5,509,220	5,509,220		
	Totals	8,152,955	11,409,996	11,409,996		
Number of Jobs Accessible within 30 Minutes by Auto	Protected	746,963	692,518	594,314	-7.29%	-20.44%
	Non-Protected	491,099	401,481	321,606	-18.25%	-34.51%
	Difference	255,863	291,036	272,708		
Number of Jobs Accessible within 60 Minutes by Transit	Protected	333,437	464,766	372,115	39.39%	11.60%
	Non-Protected	175,116	212,217	147,277	21.19%	-15.90%
	Difference	158,321	252,549	224,839		
Percent of Lane Miles Congested	Protected	52%	65%	75%	24.75%	44.76%
	Non-Protected	48%	60%	79%	23.98%	62.72%
	Difference	4%	5%	3%		

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3. Social Considerations: Travel and Tourism

The Importance of Travel and Tourism

Travel and tourism continue to be one of the biggest contributors to the economy in North Central Texas. Each year travelers and tourists spend over \$20 billion on hotels, meals, shopping, and attractions.²⁹

Both Dallas and Fort Worth are in the top five destinations in Texas for visitors within the US. These visits translate into billions more in indirect spending and support nearly 700,000 jobs in the region.³⁰

Most visitors to the region are from Texas and other states within the US, while 12 percent of visitors come from international destinations. Most international visitors are from Mexico. Most other international visitors come from Canada, United Kingdom, Germany, China, Australia, and Brazil.³¹

Major Tourist Destinations

Tourist attractions can be classified into four broad categories: natural attractions, purpose-built or manmade attractions, sports attractions, and special events. Following are some of the most popular tourist destinations in North Central Texas.

Natural Attractions

Most natural attractions in the Dallas-Fort Worth metroplex are parks and trails near lakes. Examples include White Rock Lake in Dallas and Eagle Mountain Lake north of Fort Worth.

Purpose-Built Attractions

These types of attractions include entertainment parks, wildlife attractions, museums and art galleries, unique built attractions, and historical or heritage attractions. Examples include:

TRAVEL AND TOURISM AT-A-GLANCE

North Central Texas welcomes millions of visitors from all over the US and the world. Who they are and how they spend their time during their visit is of great interest to tourism and transportation planning professionals.

Did You Know?

The top tourist activities for visitors to Texas are dining and shopping.

People from Los Angeles, New York, Oklahoma City, Chicago, Atlanta, and Denver are the top out-of-state travelers to Texas.

There are 90 state parks in Texas.

Most visitors drive by auto and drive less than 250 miles.

Most visits to Texas are for business or are family related.

Almost \$200 million is spent each day by travelers in Texas.

Travel directly supports one out of every 10 Texas jobs.

72.5 million people visited Texas in 2018.

The top expenses for travelers to Texas are food, transportation, lodging, and shopping.

Source: Office of the Governor 2021-2022 Texas Economic Development Guide. Retrieved from www.gov.texas.gov; Texas Travel Alliance Travel & Tourism Facts 2019. Retrieved from www.ttia.org

²⁹ Office of the Governor - Texas Travel Research Dashboard. Retrieved from www.gov.texas.gov

³⁰ 2021-2022 Texas Economic Development Guide. Retrieved from www.gov.texas.gov

³¹ Texas Travel Alliance Travel & Tourism Facts 2019. Retrieved from www.ttia.org

- The Fort Worth Stockyards National Historic District
- The Sixth Floor Museum at Dealey Plaza in Dallas
- Dallas and Fort Worth Zoos
- Fair Park in Dallas
- Fort Worth Water Gardens
- Six Flags Over Texas and Six Flags Hurricane Harbor in Arlington
- Great Wolf Lodge in Grapevine

Shopping, Dining, and Neighborhoods

The top activities for visitors in North Central Texas are dining and shopping. As seen in **Exhibit 3-38**, there is an abundance of options. There are also many distinctive neighborhoods in the region drawing visitors from around the world. Some regional shopping and unique neighborhood examples are:

- The Legacy Entertainment District in Plano
- NorthPark Center and The Shops at Park Lane in Dallas
- Allen Premium Outlets
- Dallas neighborhoods: Deep Ellum, Uptown, Greenville Avenue, Inwood, Knox-Henderson, Victory Park, the Design District, the Bishop Arts District, and Trinity Groves
- Fort Worth neighborhoods: Sundance Square, West 7th Street, and Magnolia Avenue entertainment districts
- Main Street and Grapevine Mills mall in Grapevine
- The Addison Entertainment District
- Stonebriar Centre

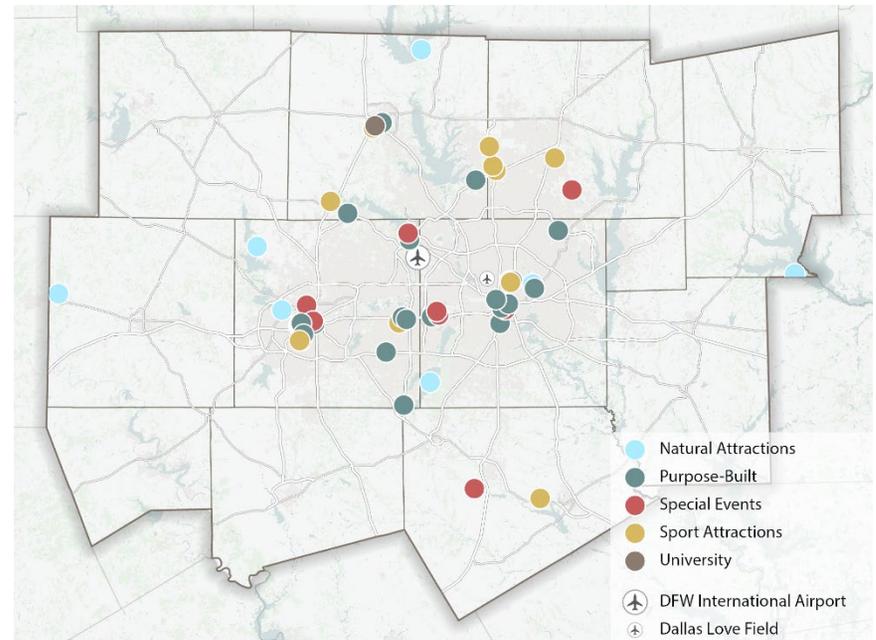
Sports Attractions

Sports are an important part of North Central Texas' culture and economy. There are many different sports that welcome spectators and draw tourists during events ranging from large sporting events such as professional matches (for example, football, baseball, and basketball), to smaller, more localized events like high school football. Examples of major sports destinations include:

- AT&T Stadium and Globe Life Field in Arlington

- Toyota Stadium, Dr Pepper Ballpark, Dr Pepper Arena, and the Ford Center at the Star in Frisco
- Texas Motor Speedway in Fort Worth and Texas Motorplex in Ennis
- American Airlines Center in Dallas

Exhibit 3-38: Major Tourist Destinations



Special Events

Special event attractions, which typically include markets, festivals, parades, and exhibitions, do not always have a fixed location or time period. However, there are many entertainment venues in the region which host rotating programs of events. Examples include:

- Gaylord Texan Resort & Convention Center in Grapevine
- Lone Star Park and Texas Trust CU Theatre at Grand Prairie
- Bass Performance Hall in Fort Worth
- Kay Bailey Hutchison Convention Center in Dallas
- Renaissance Festival Grounds in Waxahachie

Tourism and Travel Options

Tourists visiting North Central Texas are well served by its multimodal network. Efficient aviation facilities work in tandem with a strong transit system to enhance tourism opportunities and provide ease of access to popular destinations. Dallas Area Rapid Transit's light rail system connects to Dallas Fort Worth International Airport, as well as Trinity Metro's new TexRail line, allowing visitors to travel directly from the airport to Dallas and Fort Worth city centers.

Some services, such as the McKinney Avenue Trolley and the Grapevine Vintage Railroad, are attractions by themselves. Most tourist destinations are easily accessible by public transit or rideshare services. **Exhibit 3-38** shows major tourist destinations in the region.

Travel mode for tourists may be dependent on income and/or destination. Generally speaking, tourists place a high value on travel time and are willing to take more expensive modes of travel while on vacation.

Summary

Travel and tourism serve a vital role in the Dallas-Fort Worth region's economy, and transportation is an important component which supports it. Providing options for how visitors get to destinations ensures the economic health of the North Central Texas region.

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3. Social Considerations: Public Participation Requirements

Introduction

A proactive public participation process is vital to ensuring the transportation planning process fosters meaningful involvement by all users of the system, including the business community, community groups, environmental organizations, freight operators, and the traveling public. Informing stakeholders of critical issues facing the region and providing opportunities to contribute ideas and offer input is important to developing a plan that represents a wide variety of interests and mobility needs without harming air quality.

The overall objectives of NCTCOG's (North Central Texas Council of Governments') Public Participation Plan are to be proactive and provide:

- Accurate information
- Timely public notice
- Transparency
- Opportunities for early and continuing involvement

Federal laws and regulations provide some requirements for public involvement. NCTCOG strives to go beyond these requirements and provide a comprehensive program to ensure all residents of the region are provided an opportunity to participate in the decision-making process and are informed about efforts to plan transportation that will be accessible, financially viable, and sustainable.

The Public Participation Plan addresses the following:



Mobility 2045 Update Supported Policies

The Mobility 2045 Update supports the following public involvement policies:

P13-001: Meet federal and state requirements to ensure all individuals have full and fair access to provide input on the transportation decision-making process.

P13-002: Demonstrate explicit consideration and response to the public input received.

P13-003: Use strategic outreach and communication efforts to seek out and consider the needs to those traditionally underserved by the transportation planning process.

P13-004: Enhance visualization of transportation policies, programs, and projects.

P13-005: Provide education to the public and encourage input and engagement from all residents on the transportation system and the transportation decision-making process.

Public Participation Plan

The NCTCOG 2018 Transportation Public Participation Plan (updated in 2020) guides how and when public involvement will be carried out on decisions made by the RTC (Regional Transportation Council).

[View document online](#) 

Through the Language Assistance Plan, NCTCOG seeks to ensure that all residents can provide input on transportation decisions regardless of their ability to read, write, or understand English. The Language Assistance Plan includes a four-factor analysis to identify LEP (limited English proficient) populations and determine how these individuals are served or are likely to be served by NCTCOG Transportation Department programs. To better serve the LEP population, several key documents are translated into Spanish, and a Google Translate

widget enables website visitors to read basic translations of Transportation Department webpages in more than 100 languages. Notices of public input opportunities, describing how to request alternate formats and language translation, include text in English and Spanish. Reasonable effort is made to accommodate language translation requests if sufficient notice is provided.

Public involvement and outreach for projects included in the Mobility 2045 Update and Transportation Conformity have been conducted in accordance with the 2018 Transportation Public Participation Plan Public Involvement Strategies.

Regional public input opportunities are held throughout the year. These opportunities request input on upcoming decisions by the RTC, and they inform the public of other planning activities. The NCTCOG Transportation Department maintains a database of individuals and groups wishing to receive notice of these public input opportunities. Notice is sent to these individuals before every input opportunity, and advertisements are placed in the Texas Register and in local and minority newspapers. Online advertising is also used. **Exhibit 3-39** lists the different types of media outlets that receive press releases announcing public input opportunities and other news related to department programs and projects.

Exhibit 3-39: Number of Media Outlets Receiving Press Releases

Local newspapers/magazines (total)	144
Minority newspapers/magazines	22
Television stations (total)	10
Minority television stations	2
Radio stations	9

The Transportation Department also publishes monthly and semiannual newsletters, technical brochures, and required planning documents each year. These are made available to the public in both print and online formats. Fact sheets help educate the public about

department projects, air quality, transportation funding, and sustainable development. These publications are listed in the **Social Considerations** appendix.

Providing information through the internet is an important strategy, and the Transportation Department website is updated regularly to ensure accurate and timely information is available. The department has joined social media networks and streaming video websites to expand opportunities to provide education and make it easier for the public to submit comments. RTC meetings are livestreamed from the department's website and are archived there. Video recordings of public input opportunities are posted online, allowing greater access and convenience for the public to learn about and provide input on plans.

The Transportation Department's online presence has grown, and public involvement procedures have shifted to more modern communication preferences. Public input opportunities and virtual engagement tools have created new avenues for the public and partners to comment on transportation projects, air quality initiatives, and routine items such as modifications, minor amendments, and administrative revisions to planning documents. Online public input opportunities are advertised in the same manner as public meetings and meet the comment period requirements outlined in the Public Participation Plan. The Transportation Department can better match content, strategies, and audiences by using online input opportunities and virtual tools and technologies to inform the public about changes to documentation.

The Transportation Department collaborates with community partners to educate the public on transportation programs and the planning process with their members, stakeholders, and the broader public. By leveraging existing networks of homeowner associations, business groups, and community organizations, especially those that engage low-income, minority, disabled, and LEP individuals and

communities, NCTCOG is trying to reach greater numbers of people and more diverse audiences.

Finally, animations, maps, renderings, photos, and Map Your Experience—the Transportation Department's new online input mapping tool—are used whenever possible to increase understanding, as well as provide opportunities for public input among all audiences.

Public Involvement for the Mobility 2045 Update

A variety of strategies were used to encourage public participation during the Mobility 2045 Update. Information about goals, demographic forecasts, financial constraints, involvement opportunities, and air quality impacts was featured in publications, on the NCTCOG website, on social media, and in emails sent to individuals and groups who have expressed an interest in receiving information. Insights and public comments received through the Map Your Experience tool are included in this chapter, as well in the **Social Considerations** and **Mobility Options** appendices.

In compliance with the Public Participation Plan, public meetings were held 60 days and 30 days prior to RTC approval of the Mobility 2045 Update. The following public involvement information is included in the **Social Considerations** appendix: a list of both virtual and in-person public input opportunities and community events at which the Mobility 2045 Update was discussed, a summary of public comments received for the Mobility 2045 Update, and official responses to those comments.

The 2018 Transportation Conformity document includes public meeting notices, meeting minutes, and comments for all public meetings that featured a Mobility 2045 Update or Transportation Conformity agenda item.

Map Your Experience

MYE (Map Your Experience)³² is an online mapping tool designed to gather crowdsourced data from residents and visitors to North Texas. It collects information from travelers where they have trouble traveling. MYE is available in both English and Spanish and provides an interactive experience where users can like or comment on comments submitted by other users. The tool also offers a

View interactive
dashboard in
browser



dashboard³³ with summaries available of submitted comments by mode, comment category, or optional demographic information.

Because of the sudden onset of the COVID-19 pandemic, public engagement during the Mobility 2045 Update shifted to virtual strategies for 2020 and most of 2021. MYE, originally developed prior to the pandemic, was rolled out in an expedited fashion in early 2020 and is available online anytime. In May 2021, postcards (pictured in **Exhibit 3-40**) were designed and sent to the NCTCOG public involvement mailing list to attempt to reach a broad audience and encourage use of MYE.

From May 2020 to January 2022, 475 comments were submitted to the tool. The map pins placed by north Texans are shown in **Exhibit 3-41** and are also available in an online dashboard.

For the Metropolitan Transportation Plan, the addition of early-stage qualitative data on problems people face when traveling complements the suite of public involvement tactics and activities.

³² NCTCOG, Interactive Public Input (Map Your Experience), <https://www.nctcog.org/trans/plan/mtp/map-your-experience>

³³ NCTCOG, Map Your Experience Dashboard, <https://www.arcgis.com/apps/dashboards/4b52c8101dd7476389f3e934455b78dc>

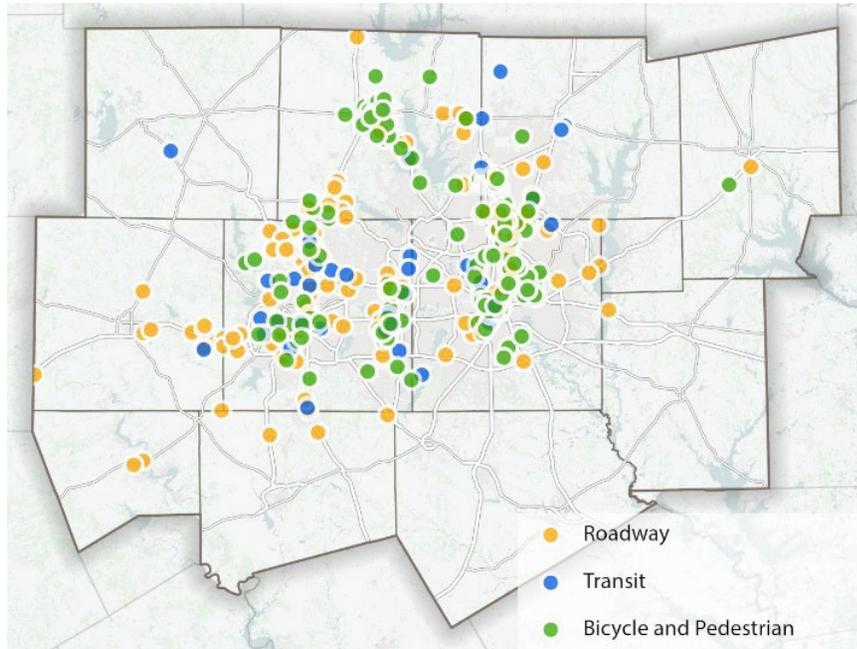
Exhibit 3-40: Map Your Experience Postcard



NCTCOG utilized the Map Your Experience tool to gather public input on the Mobility 2045 Update. A postcard was developed to encourage use of the tool.

By overlaying the map pins from the MYE tool onto plan recommendations, it becomes possible to identify where recommendations are meeting needs, and where new solutions need to be developed. Mode-specific summaries and maps are available in the **Social Considerations** and **Mobility Options** chapters.

Exhibit 3-41: Map Pins Placed by North Texans



Partner Coordination

In addition to engaging the public, regional transportation and non-transportation partners were consulted throughout the update of the policy, program, and project recommendations in the Mobility 2045 Update. Regional transportation partners include the Texas Department of Transportation, North Texas Tollway Authority, regional transit authorities, and environmental resource agencies.

These partners were involved through committee, public, and project-specific meetings, phone calls, and other correspondence to coordinate long-range regional transportation efforts. Several transportation committees such as the Surface Transportation Technical Committee, Air Transportation Advisory Committee, Regional Freight Advisory Committee, and the Bicycle and Pedestrian Advisory Committee lend expertise and help develop recommendations for the RTC to consider. The RTC guided staff's

updates to Mobility 2045 Update priorities and policies and is ultimately responsible for approving and implementing the Mobility 2045 Update.

Summary

A transportation system must include transportation options for all residents of the region. Mobility is important to residents' quality of life and the region's economic vitality. Therefore, the RTC uses several strategies to ensure the social considerations of the Mobility 2045 Update.

Transparent processes and opportunities for public involvement guide the development of a transportation plan that helps improve air quality while being multimodal and financially viable. This multi-step approach includes seeking the public's participation in the updating of the Mobility 2045 Update and analyzing its recommendations' impacts on protected populations.

This process has guided recommendations that manage congestion, provide access to jobs and recreation, and contribute to a high quality of life for the residents of North Central Texas.

MOBILITY 2045 planning process

STEP 1: BASELINE ANALYSIS

SPRING & SUMMER 2020 FALL 2020 WINTER 2020 / SPRING 2021 SUMMER 2021 SUMMER 2022 FALL 2022



EXAMINE CURRENT
CONDITIONS



FORECAST REGIONAL
GROWTH



IDENTIFY
NEEDS

STEP 2: ASSESS FUNDING & PROJECTS

SPRING & SUMMER 2020 FALL 2020 WINTER 2020 / SPRING 2021 SUMMER 2021 SUMMER 2022 FALL 2022



ASSESS FINANCIAL
RESOURCES



REVIEW AND UPDATE
RECOMMENDATIONS

STEP 3: ENSURE PLAN IS GOOD FOR PEOPLE / ENVIRONMENT

SPRING & SUMMER 2020 FALL 2020 WINTER 2020 / SPRING 2021 SUMMER 2021 SUMMER 2022 FALL 2022



ASSESS SOCIAL EQUITY AND
AIR QUALITY IMPACTS



OFFICIAL PUBLIC REVIEW
AND COMMENT PERIOD



REGIONAL TRANSPORTATION
COUNCIL ADOPTION



FEDERAL AIR QUALITY
CONFORMITY DETERMINATION

STEP 4: PLAN ADOPTION

SPRING & SUMMER 2020 FALL 2020 WINTER 2020 / SPRING 2021 SUMMER 2021 SUMMER 2022 FALL 2022