

Social Considerations

Mobility 2035 Supported Goals

- Assure 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.

Public Benefits of the Transportation System

The transportation system provides residents in the Dallas-Fort Worth area access to jobs, medical care, recreation, education, and public facilities and opportunities. The ease of accessing daily life activities and the availability of transportation options contributes to the overall quality of life of a region. Developing transportation infrastructure, focusing on the way people travel, and improving the connection between land use and transportation while maintaining sensitivity to diverse demographic and social needs is key to supporting vibrant and livable communities and enhancing quality of life for all residents.

Opportunities to walk instead of drive are linked to healthy communities or a community which includes elements that enable people to maintain a high quality of life and productivity. The benefits of walking – whether for utilitarian or recreational purposes – can be expressed in terms of improved environment and personal health, reduced traffic congestion, enhanced quality of life, and economic rewards, as well as other benefits.¹ The Centers for Disease Control (CDC) have linked the lack of physical activity as a major contributor to the rise in obesity, diabetes, heart disease, and several other chronic conditions in the United States.² The CDC Recommendations for Improving Health through Transportation Policy

¹ Pedestrian and Bicycle Information System, 2010, www.walkinginfo.org

² CDC Recommendations for Improving Health through Transportation Policy, www.cdc.gov/transportation

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 and engage North Central Texans in the transportation planning process. It is expected that by 2035 nearly ten million people will call North Central Texas home. Meeting the mobility needs of today and tomorrow requires coordination and collaboration of all stakeholders. Likewise, nondiscrimination 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.

In This Chapter:

- Public Benefits of Transportation System
- Regional Demographic Profile
- Environmental Justice
- Public Involvement

Did You Know ...

... by the year 2035, the 12-county Metropolitan Planning Area is forecasted to grow to 9.8 million residents; a 50 percent increase in the population of North Central Texas over the next 25 years?

... job accessibility will increase for protected populations by 64 percent if Mobility 2035 roadway and transit recommendations are built by the year 2035?

“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

outlined several transportation policies that have direct impacts on human health. A key recommendation of this report to improve the health of a community through transportation policy is to promote active transportation.

Mobility 2035 includes policies, programs, and projects that support a range of mobility options that contribute to livable communities. Through development of active transportation systems such as bicycle and pedestrian facilities, Mobility 2035 promotes active lifestyles that lead to healthy communities. Active transportation offers opportunities for residents to engage in physical activity while traveling to daily activities. Active transportation facilities create more equitable communities by providing transportation options for all residents. By providing a system that may be utilized by all residents regardless of income, age, or disability, active transportation has the ability to increase the social capital and economic health of a community. Active transportation elements such as bicycle and pedestrian options can be found in the Mobility Options chapter.

Considerations for healthy, livable, and sustainable communities should be integrated into the transportation planning process. The Environmental Considerations, Operational Efficiency, and Mobility Options chapters of Mobility 2035 recommend programs and projects that aim to support and lead to healthy, livable, and sustainable communities for the existing and future residents of the Dallas-Fort Worth area.

Regional Population and Employment Trends

Regional population and employment trends and forecasts determine where residents currently live, work, and carry out leisure activities and where they will be undergoing these activities in the future. This information is necessary for the transportation plan in order to provide facilities and connections that aim to meet the mobility and accessibility needs of existing and future populations.

The Dallas-Fort Worth-Arlington Metropolitan Statistical Area (MSA) was one of the fastest growing areas in the United States during the 2000s.³ The MSA had the second largest increase in population after the Houston-Sugar Land-Baytown MSA. From 2000 to 2010, the Dallas-Fort Worth-Arlington MSA population increased 23.4

percent, an addition of 1.2 million residents (from 5,161,544 in 2000 to 6,371,773 in 2010).⁴ According to the most recent American Community Survey, the MSA was listed as the fourth largest in the country.

The region continues to experience high levels of population growth and forecasts project this trend will continue through 2035. The continued growth in this region is important to transportation planners who strive to provide a system that meets the needs of a diverse population. Several key considerations for planners related to demographics and transportation include the density, size, and profile of the population. Population location and quantity impact where transportation improvements will be needed to curb congestion and have an effect on the land use/transportation connection. These two aspects are explored further in the Mobility Options chapter and the Sustainable Development portion of the Operational Efficiency chapter.

Historical Population Growth

In 2010, the 12-county Dallas-Fort Worth Metropolitan Planning Area (MPA) had a population of approximately 6.5 million.⁵ By the year 2035, these same 12 counties are forecasted to grow to 9.8 million residents. This growth represents a 50 percent increase in the population of North Central Texas over the next 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 1990, 2000, and 2010. In 1990, Collin, Dallas, Denton, and Tarrant counties (core counties) had a combined population of 3.56 million, or 89 percent, of the 12-county population. In 2000, these core counties had grown to nearly 4.6 million, or 88 percent, of the regional population and in 2010, these four counties accounted for approximately 5.6 million, or 88 percent, of the 12-county population. *Exhibit 3.2* shows the changes in population share of each county of the 12-county region.

Looking more closely at the individual growth of each of these four counties provides additional perspective on regional growth. From 1990 to 2010, Dallas County's percentage of the 12-county region population decreased by nine percentage points while Tarrant County's population decreased by one percentage

³ The Dallas-Fort Worth-Arlington MSA consists of Collin, Dallas, Delta, Denton, Ellis, Hunt, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise counties.

⁴ 2010 US Census, www.census.gov

⁵ 2010 Census, www.census.gov

point. The population percentage of Collin County and Denton County increased by five percent and three percent, respectively, during the past two decades.

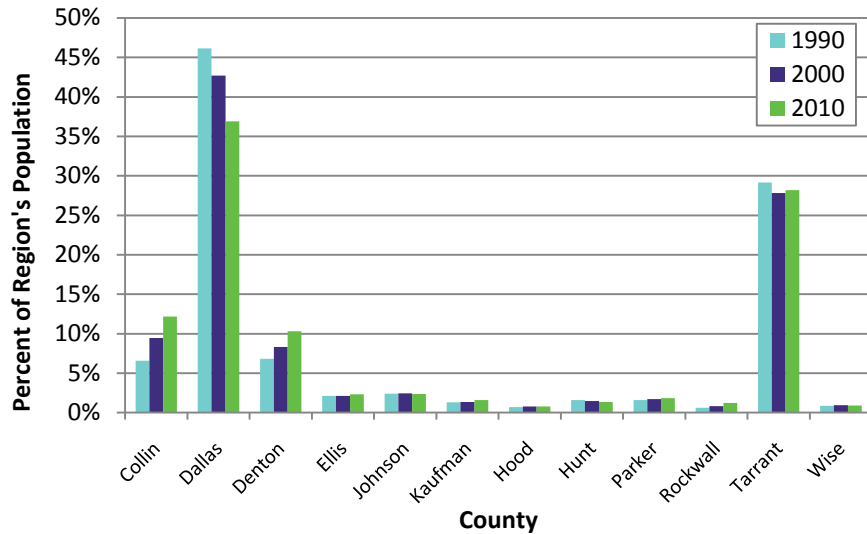


Exhibit 3.1: Historical Population Growth by County, 1990-2010 US Census Data

Additionally, more than 52 percent of the regional growth between 2000 and 2010 was accounted for by eight cities: Fort Worth, 17 percent; Dallas, 10 percent; Frisco, 6 percent; McKinney, 6 percent; Plano, 4 percent; Arlington, 3 percent; Grand Prairie, 3 percent; and Allen, 3 percent.

Population Forecasts

Mobility 2035 uses the North Central Texas Council of Governments (NCTCOG) 2040 demographic forecast to develop the transportation recommendations included in the Metropolitan Transportation Plan. The 2012 and 2035 population forecasts are used to model the regional transportation needs associated with roadways, transit, and other programs and projects. Using the population forecasts for 2012 and 2035, the total population of the MPA is projected to increase from 6,651,887 in 2012 to 9,833,378 in 2035. Exhibit 3.3 represents this increase of 48 percent growth and the growth by individual counties in the MPA.

| MPA County | Population | | | | | |
|--------------|------------------|------------|------------------|------------|------------------|------------|
| | 1990 | | 2000 | | 2010 | |
| | Number | Percent | Number | Percent | Number | Percent |
| Collin | 264,036 | 7 | 491,675 | 10 | 782,341 | 12 |
| Dallas | 1,852,810 | 46 | 2,218,899 | 43 | 2,368,139 | 37 |
| Denton | 273,525 | 7 | 432,976 | 8 | 662,614 | 10 |
| Ellis | 85,167 | 2 | 111,360 | 2 | 149,610 | 2 |
| Hood | 28,981 | 1 | 41,100 | 1 | 51,182 | 1 |
| Hunt | 64,343 | 2 | 76,596 | 2 | 86,129 | 1 |
| Johnson | 97,165 | 2 | 126,811 | 2 | 150,934 | 2 |
| Kaufman | 52,220 | 1 | 71,313 | 1 | 103,350 | 2 |
| Parker | 64,785 | 2 | 88,495 | 2 | 116,927 | 2 |
| Rockwall | 25,604 | 1 | 43,080 | 1 | 78,337 | 1 |
| Tarrant | 1,170,103 | 29 | 1,446,219 | 28 | 1,809,034 | 28 |
| Wise | 34,679 | 1 | 48,793 | 1 | 59,127 | 1 |
| Total | 4,013,418 | 100 | 5,197,317 | 100 | 6,417,724 | 100 |

Exhibit 3.2: Population Share of Counties of the 12-county Region, 1990, 2000, and 2010

| MPA County | 2012 Population | 2035 Population | Growth | Percent Growth |
|--------------|------------------|------------------|------------------|----------------|
| Collin | 806,425 | 1,404,149 | 597,724 | 74% |
| Dallas | 2,444,148 | 3,125,282 | 681,134 | 28% |
| Denton | 660,863 | 1,053,903 | 393,040 | 59% |
| Ellis | 162,405 | 252,768 | 90,363 | 56% |
| Hood | 67,688 | 97,805 | 30,117 | 44% |
| Hunt | 98,791 | 148,451 | 49,660 | 50% |
| Johnson | 173,741 | 272,061 | 98,320 | 57% |
| Kaufman | 111,267 | 193,509 | 82,242 | 74% |
| Parker | 122,372 | 193,730 | 71,358 | 58% |
| Rockwall | 86,236 | 172,568 | 86,332 | 100% |
| Tarrant | 1,848,779 | 2,823,535 | 974,756 | 53% |
| Wise | 70,172 | 95,617 | 25,445 | 36% |
| Total | 6,651,887 | 9,833,378 | 3,181,489 | 48% |

Exhibit 3.3: 2040 Demographic Forecast Population Growth by County, 2012-2035

The highest magnitude of population growth among all counties is projected to occur in Tarrant County with the addition of 974,756 persons between 2012 and 2035. Dallas (682,134), Collin (597,724), and Denton (393,040) counties follow

Tarrant County as the next top three growing counties in terms of forecasted population growth between 2012 and 2035. Rockwall County has the greatest percent increase in forecasted growth with a doubling of the 2012 population in 2035 to 172,568 persons. Counties projected to grow by more than 50 percent in population include Collin, Denton, Ellis, Hunt, Johnson, Kaufman, Parker, Rockwall, and Tarrant.

Population Density

In addition to the forecasted population values by county and for the region, the population density is critical to the decision-making process regarding the needed and appropriate transportation facilities. For the Dallas-Fort Worth MPA, the population density is projected to increase from 2,058 to 3,143 persons per square mile between the years 2012 and 2035, respectively. Exhibits 3.4, 3.5, and 3.6 show the population density by county and by traffic survey zone between 2012 and 2035.

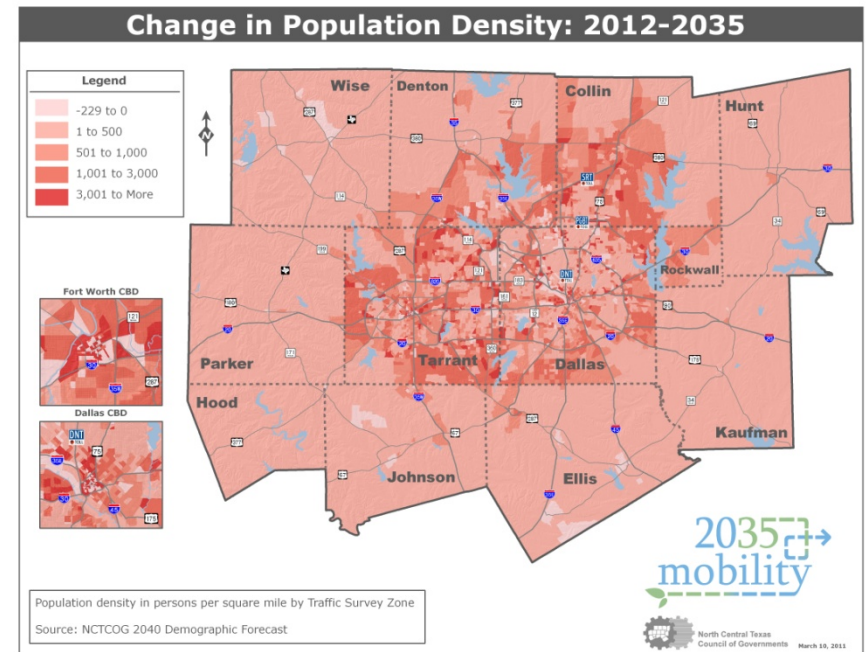


Exhibit 3.5: Population Density in the 12-county MPA, 2012 and 2035

As shown in Exhibit 3.6, density increases the greatest in Tarrant, Dallas, Collin, Rockwall, and Denton counties by 1,085; 750; 674; 580; and 410 persons per square mile, respectively, by 2035 (area shown in light blue). These increases result in the following top five densest counties in 2035: Dallas, Tarrant, Collin, Rockwall, and Denton counties at 3,438; 3,143; 1,584; 1,159; and 1,100 persons per square mile, respectively. The least dense county in 2035 is Wise County at 104 persons per square mile.

Employment Growth

North Central Texas is a major economic, social, and political center of both Texas and the United States. The Dallas-Fort Worth area represents 34 percent of the state’s economy and is the twelfth largest metropolitan economy in the world. The region supports a diverse economy and is home to 24 Fortune 500 companies. By the year 2035, the region is expected to experience a 48 percent increase in population and a 47 percent increase in employment. The transportation system is central to this growth because it allows for the efficient movement of people and goods. Understanding not only population but employment growth is critical to the

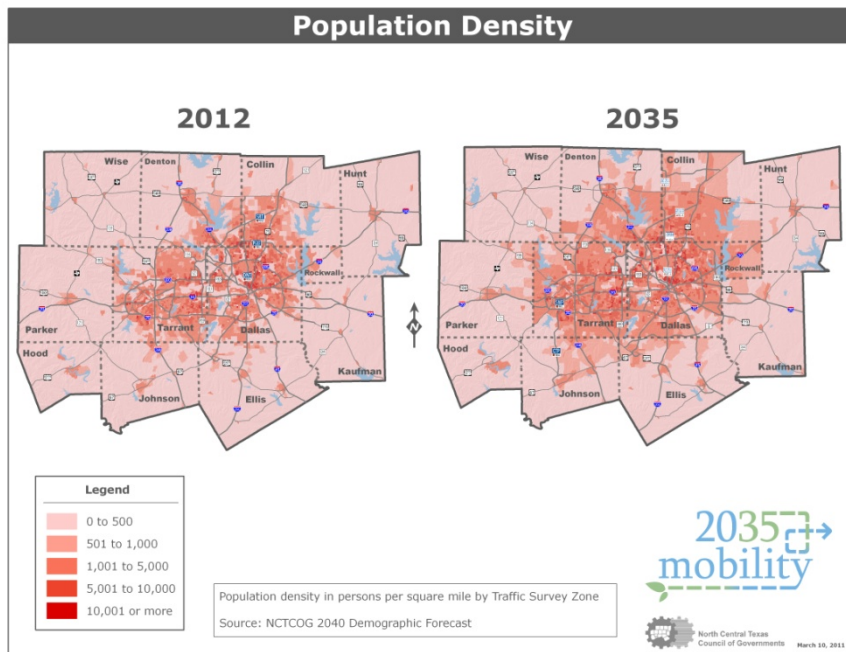


Exhibit 3.4: Increase in Population Density by County, 2012-2035

transportation planning process and to providing the best system to move people to and from jobs.

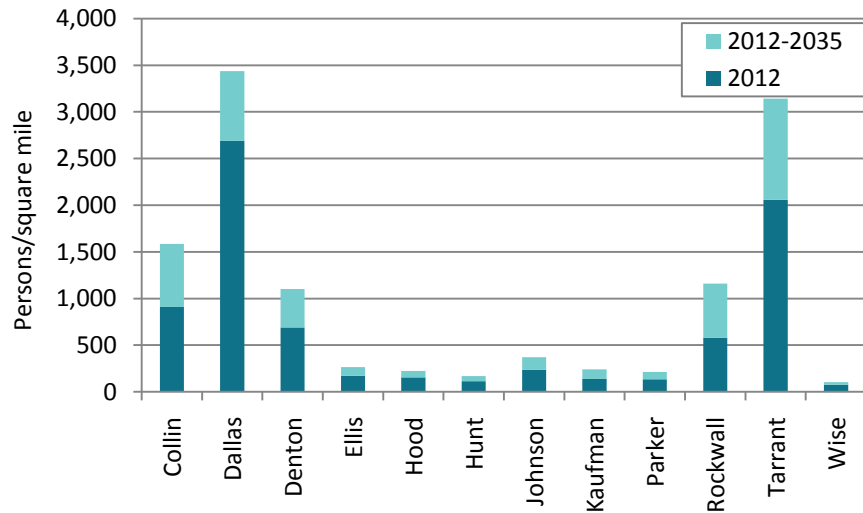


Exhibit 3.6: Change in Population Density in 12-county MPA, 2012-2035

Employment Forecast

Employment within the 12-county MPA is projected to increase 47 percent from 4,210,178 jobs in 2012 to 6,177,016 in 2035. During the same period, the average employment density is projected to increase from 446 to 654 jobs per square mile in the region. An increase of 36 percent in basic jobs, 45 percent in retail jobs, and 52 percent in service jobs is projected between 2012 and 2035.

Employment growth by county is shown in Exhibits 3.7, 3.8, and 3.9. The highest increase in the number of jobs is projected to occur in Dallas County at 707,504; a growth rate of 33 percent. Dallas County is followed by Tarrant County which is projected to have 545,498 additional jobs or a 50 percent increase. Rockwall County is projected to have the highest employment growth rate at a 108 percent increase followed by Kaufman County at a 92 percent employment growth rate.

Growth in the region’s employment plays an important role in forecasting population. Regions with job growth retain current residents and attract those moving 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.

| County | 2012 Employment | 2035 Employment | Growth | Growth |
|--------------|------------------|------------------|------------------|------------|
| Collin | 380,184 | 628,349 | 248,165 | 65% |
| Dallas | 2,146,783 | 2,854,287 | 707,504 | 33% |
| Denton | 233,187 | 406,105 | 172,918 | 74% |
| Ellis | 63,260 | 116,145 | 52,885 | 84% |
| Hood | 21,035 | 37,036 | 16,001 | 76% |
| Hunt | 48,140 | 78,163 | 30,023 | 62% |
| Johnson | 70,283 | 132,917 | 62,634 | 89% |
| Kaufman | 42,630 | 81,646 | 39,016 | 92% |
| Parker | 49,360 | 91,660 | 42,300 | 86% |
| Rockwall | 25,924 | 53,934 | 28,010 | 108% |
| Tarrant | 1,098,965 | 1,644,463 | 545,498 | 50% |
| Wise | 30,427 | 52,311 | 21,884 | 72% |
| Total | 4,210,178 | 6,177,016 | 1,966,838 | 47% |

Exhibit 3.7: Employment Growth by County, 2012-2035

North Central Texas Population Profile Changes

Planning for a demographically diverse region requires consideration for various transportation needs. Demographic trends indicate that the population will not have the same profile as it does today in terms of many factors such as race, ethnicity, income, and age. These are important elements that transportation planners must consider because they impact a variety of transportation needs. For example, an aging population requires planners to consider the enhanced safety and accessibility essential to those residents.

Historic Profile

Since the 1970s, both the overall and minority populations have increased dramatically in the region. Minority is defined as any person identified as African American, American Indian/Alaskan Native, Asian, Hawaiian/Pacific Islander, and Hispanic.

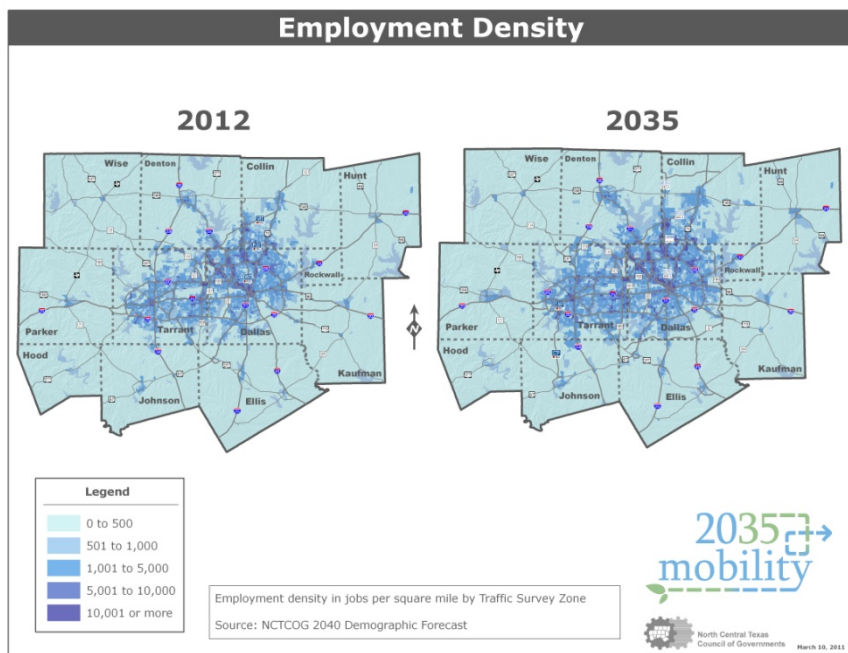


Exhibit 3.8: Employment Density in 12-county MPA, 2012 and 2035

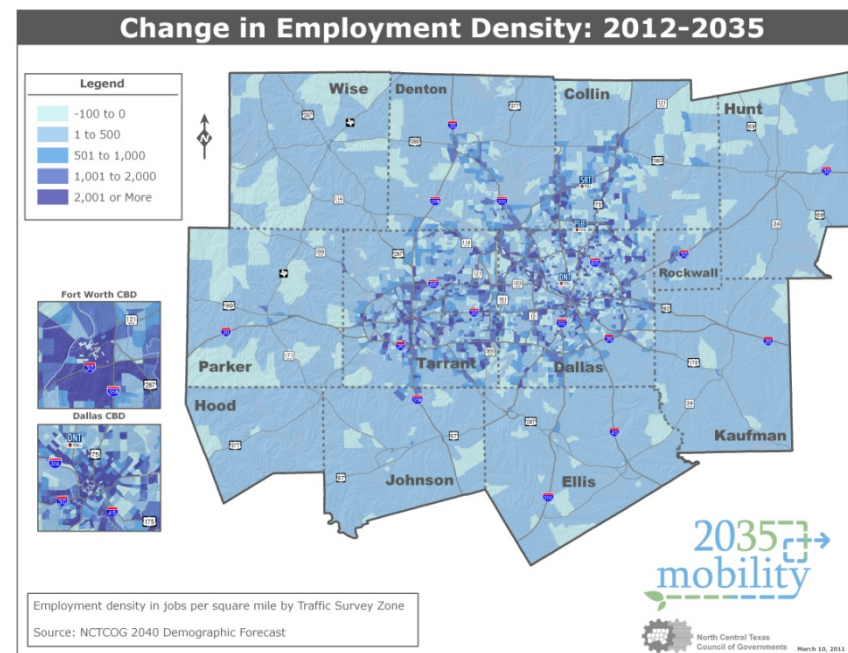
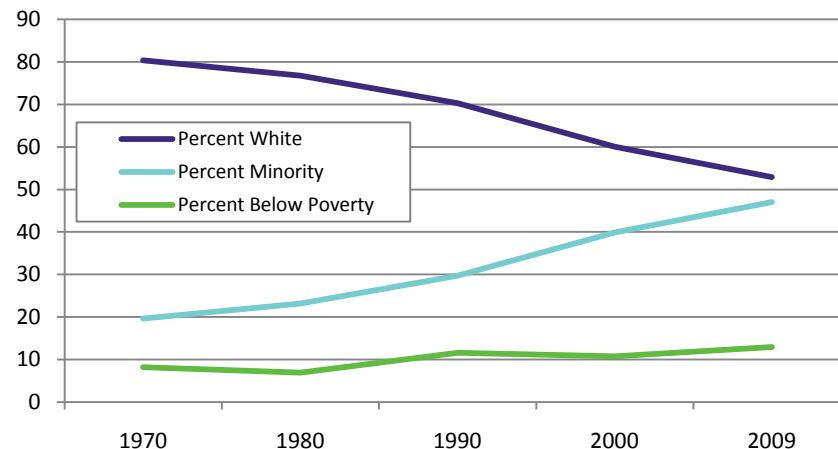


Exhibit 3.9: Change in Employment Density in 12-county MPA, 2012-2035

The overall population in the region has increased 150 percent from 2.5 million people in 1970 to 6.5 million in 2010. During the same period, the minority population has increased 500 percent from 500,000 in 1970 to 3.1 million in 2010.⁶ Exhibit 3.10 illustrates changes in the regional population profile over time.

Current Profile

During the last decade (2000 to 2010), the 12-county MPA's total population increased by 23 percent. At the same time, the minority population increased by 52 percent,⁷ of which the Hispanic population grew by 59 percent. Today, the region is demographically diverse with a total minority population of approximately 48 percent. Exhibit 3.11 illustrates the population profile of the North Central Texas region in 2010.

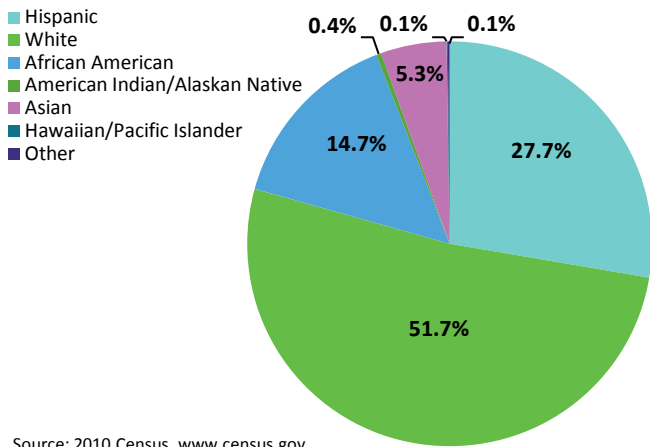


Source: www.nhgis.org

Exhibit 3.10: North Central Texas Population Change from 1970 to 2009

⁶ 1970-2000 data: Minnesota Population Center, National Historical Geographic Information System: Pre-release Version 0.1, Minneapolis, MN: University of Minnesota 2004, www.nhgis.org, 2009 data: 2010 Census www.census.gov

⁷ US Census Bureau, www.census.gov



Source: 2010 Census. www.census.gov

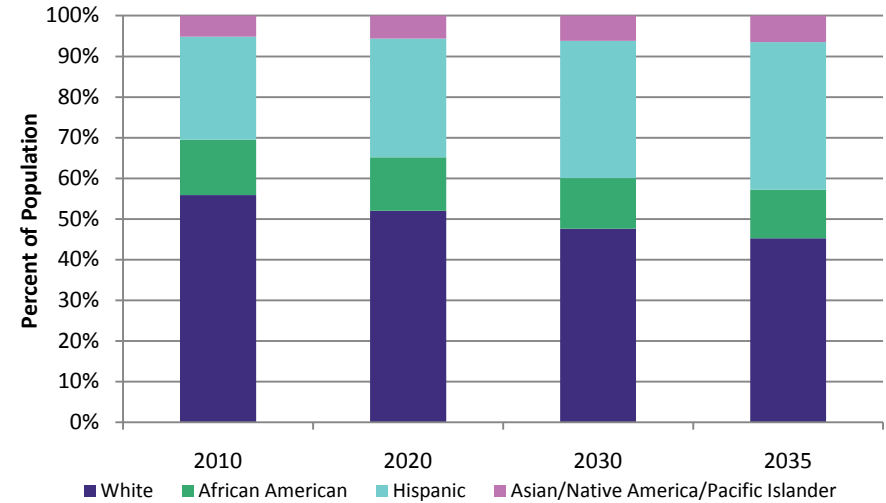
Exhibit 3.11: 2010 Population by Race and Ethnicity

Future Profile

Historically, the minority population has grown at a faster rate than the overall population. Based on current patterns in birth rates and migration, this trend is expected to continue into the future.⁸ According to forecasts from the Texas State Data Center, non-white populations will make up a majority of the region's overall population by the year 2020 while white-non-Hispanics will experience a population decrease. Of the major racial/ethnic groups, Hispanics are expected to capture more of the overall population while the African American and Asian populations are expected to remain relatively stable. Exhibit 3.12 represents how the demographic breakdown of the region is projected to change through 2035.

Changes in Language

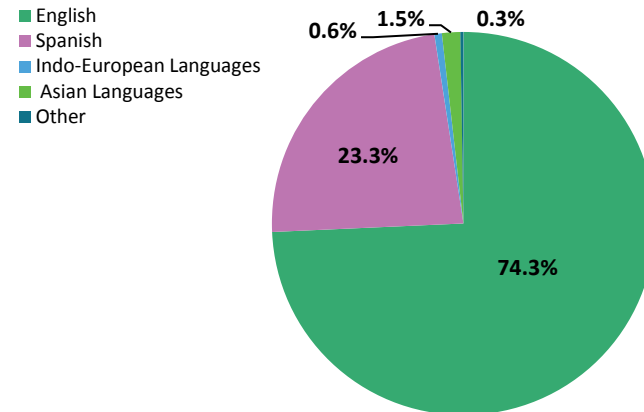
As North Central Texas continues to become a more diverse region, additional demographic changes will include the overall English proficiency of residents. The number of non-English speaking residents has increased over time. Persons who identify their ability to read, write, or speak English less-than-very-well are considered Limited English Proficient (LEP). According to 2007-2009 American Community Survey results, the largest LEP linguistic group in North Central Texas was Spanish speaking individuals at 23 percent of the region's total population.



Source: Texas State Data Center, February 2009

Exhibit 3.12: Percent of Total Population by Race/Ethnicity, 2010-2035

When all other languages are considered, approximately 26 percent of the total population has limited ability to read, write, or speak English. Exhibit 3.13 represents the linguistic distribution of the region.



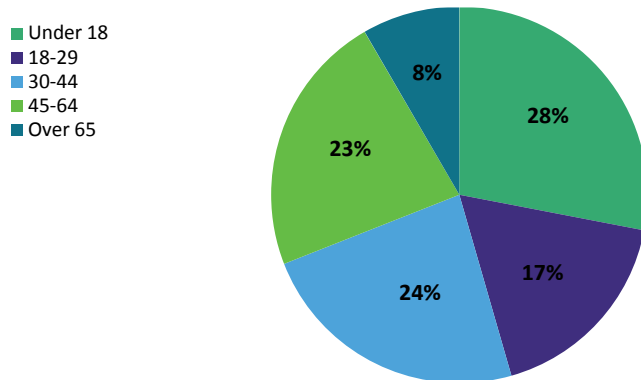
Source: 2007-2009 American Community Survey. www.census.gov

Exhibit 3.13: Languages Spoken in North Central Texas 12-county MPA, 2007-2009

⁸ Regional Choices for North Texas, Vision North Texas, 2008, www.visionnorthtexas.org

Changes in Age

Changes in age are important for planners to consider as all age groups represent different transportation needs. *Exhibit 3.14* represents the age profile of North Central Texans. The distribution of age groups has remained relatively stable from 1990 to 2010; however, the over 65 age group has been a consistently growing segment of the population. As people age, their travel behavior, modal usage, and housing location preferences and service needs may change.



Source: 2007-2009 American Community Survey. www.census.gov

Exhibit 3.14: North Central Texas 12-county Age Group Distribution, 2007-2009

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. Aspects from how to engage the public to how people travel are dependent on a solid understanding of the region's demographics. Current trends, historical census data, population projections, and economic factors are used to inform the decision-making process.

Nondiscrimination Efforts

NCTCOG and the Regional Transportation Council are committed to providing an equitable transportation system for all residents. Throughout the development of Mobility 2035, nondiscrimination and environmental justice principles were incorporated so that 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 outreach and analysis efforts. NCTCOG holds

nondiscrimination as a core principle in all efforts, including transportation planning.

The US Environmental Protection Agency defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies ... It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.”⁹

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.

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 stated 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 subject to discrimination under any program or activity receiving Federal Financial Assistance.”

The idea of environmental justice can trace its roots back to the civil rights movement of the 1960s. Title VI of the Civil Rights Act of 1964 was the basis by which nondiscrimination policies were formed. Title VI held all agencies that receive federal financial assistance accountable for their actions and mandated that those agencies ensure their policies and practices were 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

⁹ US EPA, www.epa.gov

toxic waste landfills in their neighborhoods. These efforts culminated in the signing of Executive Order 12898 in 1994 which mandated federal agencies incorporate environmental justice principles into their activities. This has evolved from protecting community human health to include social and economic health as well.

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

- 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.

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 goals guided the creation of Mobility 2035:

- Encourage community participation in the development of Mobility 2035, 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 impacts 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.

Mobility 2035 Policies

Mobility 2035 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.

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.

Integrating Nondiscrimination Principles into the Planning Process

Nondiscrimination is an integral concern during the planning and project development process. NCTCOG strives to address the needs of protected populations and assess the impacts of activities throughout the span of a project from planning to implementation. Previous outreach efforts and analyses serve as the foundation of NCTCOG's decision-making process and guide further evaluations that address a multitude of social, environmental, and economic issues related to transportation planning.

NCTCOG understands that a one-size-fits-all transportation system does not exist; needs vary greatly from one group of users to another. For this reason, NCTCOG seeks to understand the needs of specific populations to develop a system that provides a high level of service to all populations. For example, minority populations (specifically Black and Hispanic populations) have historically had larger household sizes, lower incomes, and less vehicle ownership. Statistically Asians and

African Americans are more likely to use transit and Hispanics are more likely to carpool or walk.¹⁰

The North Central Texas Council of Governments does not plan specific projects based solely on the racial or ethnic makeup of a community. However, understanding how populations utilize the transportation system, coupled with the knowledge of demographics trends, planners are able to design a system that will accommodate current and future needs. The following discussion and analysis focuses on specific efforts to support nondiscrimination in all transportation planning programs, policies, and activities.

Identifying Protected Populations

Executive Order 12898 states that agencies must “collect, maintain and analyze information on the race, national origin, income level and other readily accessible and appropriate information surrounding facilities or sites expected to have substantial environmental or economic effect on surrounding populations.” The magnitude and scope of the recommendations proposed in this plan 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 displayed in *Exhibit 3.15*.

Additional groups are considered throughout the planning process in an effort to meet the requirements of Title VI including:

- Persons 65 years and older
- Persons with disabilities
- Female head of household (any female headed household with children present and no husband)

The Environmental Justice Index (EJI) is used by NCTCOG to aggregate low-income and minority populations for analysis efforts. Low-income and minority status are aggregated and analyzed together in an effort to examine the effects of recommendations in Mobility 2035 on the protected population as a whole. The EJI

has been refined to reflect the demographic and development patterns of the North Central Texas region. Three variables, including percent below poverty, percent minority, and persons per square mile, are used to identify block groups with dense minority and low-income populations. The results are a tool for planners to easily identify populations for further analysis. *Exhibit 3.16* displays the EJI for the North Central Texas 12-county Metropolitan Planning Area.

| Population | Definition |
|-------------------------------------|---|
| Black/African American | A person having origins in any of the Black racial groups of Africa |
| American Indian/Alaskan Native | A person having origins in any of the original peoples of North and South America who maintain tribal affiliation or community attachment |
| Asian | A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian Subcontinent |
| Native Hawaiian or Pacific Islander | A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands |
| Hispanic | A person of Mexican, Puerto Rican, Cuban, Central or South America, or other Hispanic origin. |
| Low-Income | A person whose household income is below the poverty line as determined by the US Department of Health and Human Services |

Exhibit 3.15: Federally Designated Environmental Justice Population Definitions

Any block group with an EJI score above ten is considered an environmental justice protected block group for analysis purposes. This is used as the first filter in the environmental justice analysis to help determine if additional analysis needs to be conducted. Approximately 36 percent of all block groups have an EJI score above ten. This is reflective of the overall low-income and minority populations of the region which are 12 percent and 47 percent, respectively. All calculations are based on 2000 census data. *Exhibit 3.17* displays the number and percent of block groups that fall into each EJI category.

Identifying environmental justice populations is vital for system level analysis; however, this is only one step in the analysis process. Identifying individual populations allows planners to see how individual groups are impacted by plans, policies, and activities. The regional average of a specific population per block

¹⁰ TR News, Demographic Changes Driving Change; Ensuring Mobility for all Safely, Efficiently, Equitably, Edition 264, September-October 2009.

group is established as the threshold for identifying a block group as having considerable numbers of protected populations. Any block group over the regional average is considered protected. *Exhibit 3.18* shows the regional average for each protected population. Appendix B includes maps displaying the protected populations by block group that are above the regional average.

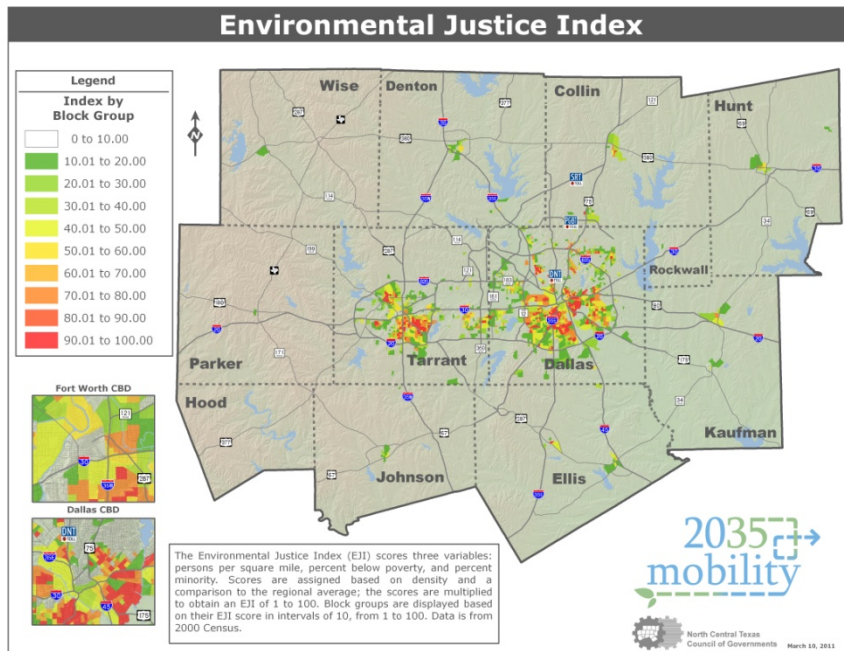


Exhibit 3.16: Environmental Justice Index for the 12-county Metropolitan Planning Area

Performance Indicators

Nondiscrimination principles are incorporated throughout the development of Mobility 2035; however, it is important to evaluate the final results to ensure that protected populations are not negatively impacted by the planned regional transportation system.

Mobility 2035 has identified \$101.1 billion in transportation projects spread over approximately 9,500 square miles. Because of the magnitude of projects to be analyzed, a qualitative assessment of each project is infeasible. For this reason, the travel demand model is used to perform an environmental justice analysis on the Mobility 2035 roadway and transit recommendations.

| EJI Score | Number of Block Groups | Percent of Block Groups |
|-----------|------------------------|-------------------------|
| 0-10 | 2306 | 64% |
| 11-20 | 298 | 8.3% |
| 21-30 | 113 | 3.2% |
| 31-40 | 140 | 3.9% |
| 41-50 | 163 | 4.5% |
| 51-60 | 17 | 0.5% |
| 61-70 | 140 | 3.9% |
| 71-80 | 52 | 1.5% |
| 81-90 | 118 | 3.3% |
| 91-100 | 232 | 6.5% |

Exhibit 3.17: Number of Protected Block Groups by EJI Score

| Population | Regional Average |
|-----------------------------------|------------------|
| African American | 14.9% |
| American Indian/Alaskan Native | 0.6% |
| Asian | 3.3% |
| Native Hawaiian/ Pacific Islander | 0.2% |
| Hispanic | 22.3% |
| Below Poverty | 11.9% |

Exhibit 3.18: 2000 Regional Averages for Protected Populations¹¹

The goal of the transportation system is to allow people to reach their destinations in the most efficient and effective way. One of the goals of Mobility 2035 is to improve the availability of transportation options for people and goods. This is achieved through enhancing mobility and accessibility.

Mobility is the potential for movement or the ability to travel from one place to another. Examples of factors that impact mobility include road capacity, intelligent transportation systems, and design. Accessibility denotes how well the system provides access to locations and opportunities. Examples of factors that impact

¹¹ At the time Mobility 2035 was published, 2010 Census data did not contain poverty status. For consistency in the performance measure analysis of Mobility 2035, 2000 Census data was used to establish regional average until poverty status is made available.

accessibility include the cost in both time and dollars and the number of modal choices available to reach a location.¹²

Accessibility has a direct impact on a person’s quality of life; for this reason Mobility 2035 environmental justice performance indicators focus on accessibility versus mobility. The performance indicators used to evaluate the Mobility 2035 recommendations are shown in *Exhibit 3.19*. These performance indicators allow the assessment of impacts on accessibility to several quality of life indicators including work, education, medical care, and recreation, as shown in *Exhibits 3.21 through 3.25*.

| 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* •Average travel time to special generators (universities, hospitals, regional shopping centers) | <ul style="list-style-type: none"> •Average level of congestion •Average travel time |

*The travel time thresholds of 30 minutes by auto and 60 minutes by transit are based on regional travel patterns.

Exhibit 3.19: Mobility 2035 Environmental Justice Performance Indicators

Regional Environmental Justice Analysis

Nondiscrimination efforts are considered throughout the process from the long-range plan to the project implementation stage. Each level of analysis is performed to ensure no one population bears undue burdens of the transportation system.

Assessing the impacts at three different levels provides a greater understanding of how the project will impact a community on a macro and micro level. There are currently three levels of environmental justice analysis a project will go through, as shown in *Exhibit 3.20*.

| Analysis | Regional Transportation Plan (Mobility 2035) | Regional Priced Facilities | NEPA |
|----------|---|--|---|
| Scope | All projects proposed in Mobility 2035 on a regional level | All new priced facilities proposed in Mobility 2035 on a regional level | Project/corridor specific analysis |
| Results | Impacts on regional mobility and accessibility of proposed projects | 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 |

Exhibit 3.20: Levels of Environmental Justice Analysis

Environmental Justice Methodology

Mobility 2035 recommendations were evaluated using the established performance indicators and the following four steps were used to complete the analysis:

Step 1. Identified Protected Populations: Traffic survey zones with an EJI score of greater than ten were identified as protected. In addition to the assessment of the EJI aggregated populations, individual populations were also analyzed. Traffic survey zones above the regional average for any single population identified in *Exhibit 3.18* were considered protected zones.

Step 2. Calculated Performance Indicators: Protected traffic survey zones were compared to non-protected traffic survey zones on the identified performance indicators. A detailed description of how the performance indicators were calculated can be found in Appendix B.

Step 3. Analyzed Network and Demographic Scenarios: Each of the five performance indicators were compared across several transportation network and demographic scenarios including:

- Current Network: Existing roadway and transit facilities with 2012 population
- 2035 Build Network: All Mobility 2035 recommended roadway and transit facilities with 2035 demographics
- 2035 No-build Network: Existing roadway and transit facilities with 2035 demographics

¹²Accessibility-VS. Mobility-Enhancing Strategies for Addressing Automobile Dependence in the US, Handy, 2002.

- 2035 Priced Facilities No-build Network:¹³ All Mobility 2035 recommended roadway and transit facilities excluding priced facilities and 2035 demographics (results detailed in the Mobility Options chapter)

Step 4. Comparison of Results: Compared results of the Build to No-build scenarios and Current to Build scenarios.

The current network forms the baseline for assessing the impacts of building the Mobility 2035 roadway and transit recommendations. In the Dallas-Fort Worth area, the majority of the current system was built prior to the signing of Executive Order 12898. Because an environmental justice analysis was not performed on those roadways, the potential impacts to protected populations were not examined.

Re-routing current facilities is not a realistic option; therefore, a comparison between the Current and Build scenarios is conducted to see the rate at which any disparities are being perpetuated in future plans. Conversely comparing the Build and No-build scenarios establishes the effectiveness of the transportation system at increasing job accessibility while controlling for 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.

Environmental Justice Results

As part of NCTCOG’s commitment to provide a transportation system that is beneficial to all populations of the region, a system-level analysis was performed on the proposed 2035 network. The results of this analysis show that if built (2035 Build), the Mobility 2035 roadway and transit recommendations provide protected populations access to 21 percent more jobs by car and 92 percent more jobs by transit in the future when compared to the Current network. Both protected and non-protected populations experience a rise in the number of jobs accessible within 30 minutes by auto and 60 minutes by transit. *Exhibit 3.21* reflects the number of jobs accessible for both protected and non-protected populations between the three scenarios.

¹³ Priced Facilities No-build network excludes all priced facilities currently under construction and CDAs under contract for construction.

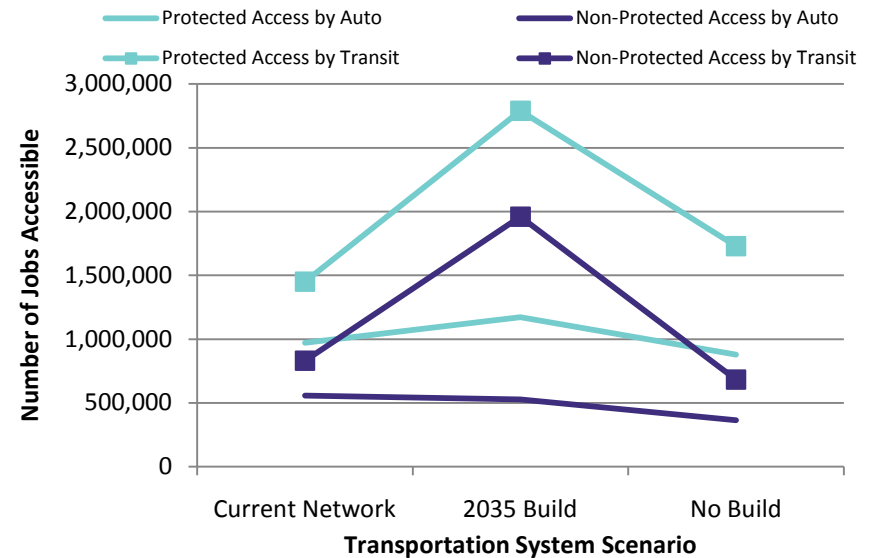


Exhibit 3.21: Job Access by Auto and Transit for Aggregate Protected Population Compared to Non-protected Populations for the Dallas-Fort Worth MPA

However, if the transportation system remains as it is today, the expected increase in population will cause congestion to worsen at a higher rate for protected populations. This will result in the protected populations experiencing a sharper decline in the number of jobs accessible than the non-protected populations.

When the Build and No-build scenarios are compared, the protected population and non-protected population both see an increase in access to jobs in the Build scenario and a decrease in access to jobs in the No-build scenario. Both groups experience a loss of mobility and accessibility from the Build to No-build scenario.

When comparing the impacts from the Current to No-build scenarios, the non-protected population sees a larger percent decline in access to jobs than the protected populations, with protected population experiencing an overall increase of 7 percent and the non-protected populations experiencing a 24 percent decrease. This can be attributed to current and future land uses and recommended transportation system improvements in the urbanized areas.

The decrease in access to jobs, specifically in the auto analysis, can be attributed to increased regional congestion. *Exhibit 3.22* displays congestion changes for protected and non-protected populations across the three scenarios. In the current

transportation system, the protected populations experience less localized congestion than the non-protected population. This trend will continue in the Build scenario; however, congestion for the protected population will outpace the non-protected population in the No-build scenario. This is a direct result of the population forecasts that indicate increased population density in the urban core where the concentration of protected populations is the greatest. Appendix B provides the detailed Regional Environmental Justice Analysis results which includes performance indicator outcomes for the aggregate and individual protected populations.

urbanized areas where the protected populations are primarily located. Therefore, overall congestion will decrease for those populations.

To determine accessibility to special generators, percent of populations within 30 minutes of a special generator was calculated. Results showed that over 90 percent of the protected population is 30 minutes from a hospital, university, or regional shopping center. This trend remains relatively constant across all scenarios while it decreases across all scenarios for the non-protected population as seen in *Exhibit 3.24*. While the transportation system cannot account for the freedom of choice for a specific university or hospital for its expertise, it does provide access to basic needs and services.

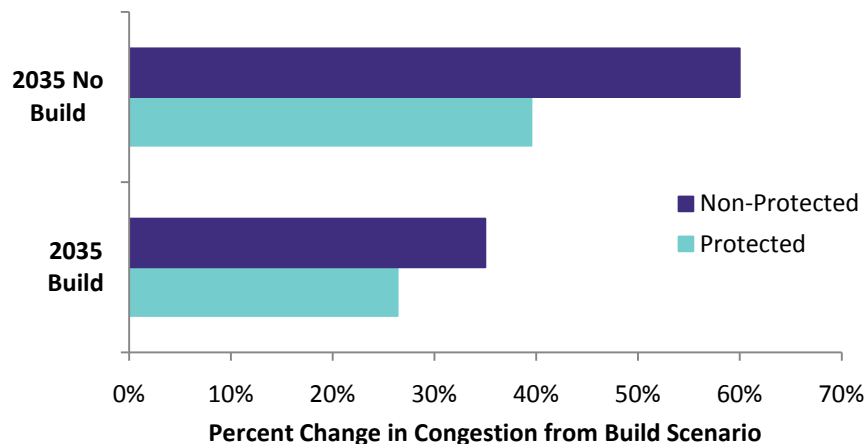


Exhibit 3.22: Localized Congestion Change across Scenarios for Protected and Non-protected Populations

While congestion increases for both the protected and non-protected populations in the Build and No-build scenarios, in both instances the non-protected population sees a much larger increase in localized congestion. 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.

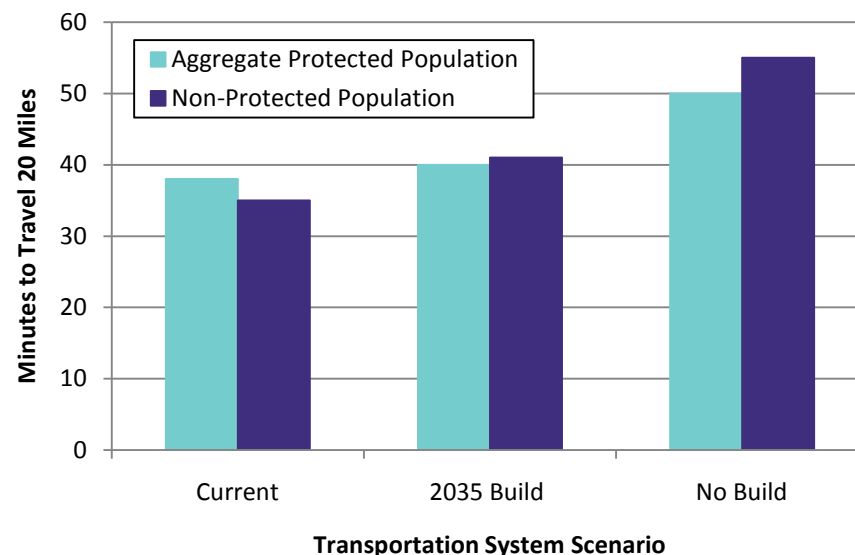


Exhibit 3.23: Average Time in Minutes to Travel 20 Miles

The results in *Exhibit 3.23* are a direct reflection of how future transportation investments will be allocated. A large portion of planned projects are located in

To assess the impacts of tolled and managed lane facilities recommended in Mobility 2035, the Priced Facilities No-build analysis was conducted. Results showed increased mobility and accessibility for protected populations with the addition of these priced facilities. The results and discussion of this analysis can be found in the Mobility Options chapter.

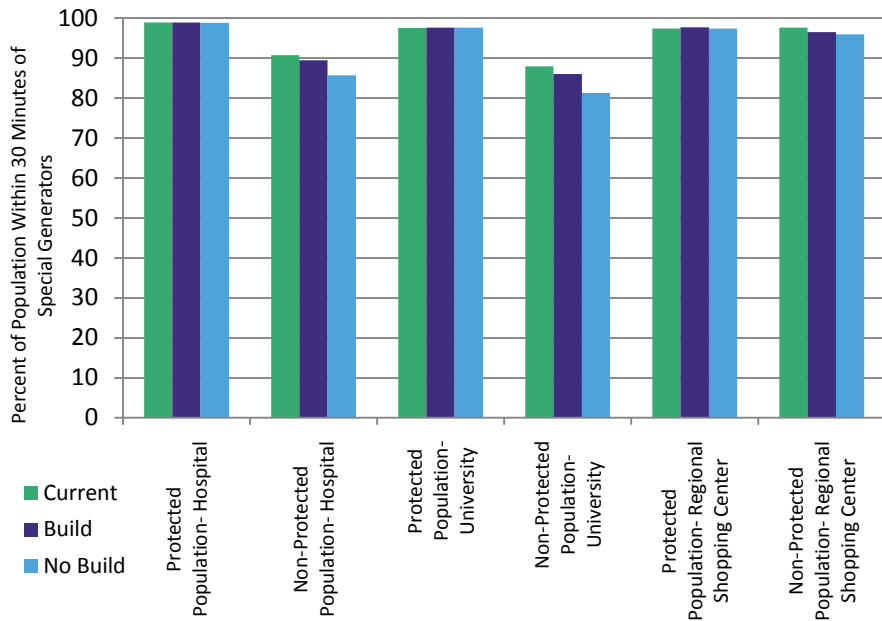


Exhibit 3.24: Percent of Population within 30 Minutes of a Special Generator (Hospitals, Universities, Regional Shopping Centers)

Summary

As a whole, the Mobility 2035 roadway and transit recommendations do not have disparate impacts on protected populations. Overall mobility and accessibility increase for the protected populations in the Build scenario. *Exhibit 3.25* illustrates the overall results of the three main performance indicators for the EJI Aggregated Population compared to the non-protected population. Appendix B contains the complete methodology and results for the environmental justice analysis.

| Performance Measure | Population | Current Network | 2035 Build | No-build | Percent Change (Build vs No-build) |
|---|-------------------|------------------|------------------|------------------|------------------------------------|
| | Protected | 1,691,315 | 2,068,901 | 2,068,901 | |
| | Non-protected | 4,960,572 | 7,764,477 | 7,764,477 | |
| | <i>Total</i> | <i>6,651,887</i> | <i>9,833,378</i> | <i>9,833,378</i> | |
| Number of Jobs Accessible within 30 Minutes by Auto | Protected | 964,155 | 1,179,474 | 878,153 | 34.3 |
| | Non-protected | 549,205 | 525,644 | 364,362 | 44.3 |
| | <i>Difference</i> | <i>414,950</i> | <i>653,830</i> | <i>513,790</i> | |
| Number of Jobs Accessible within 60 Minutes by Transit | Protected | 1,454,972 | 2,991,784 | 1,729,265 | 73.0 |
| | Non-protected | 834,165 | 2,182,494 | 682,122 | 220.0 |
| | <i>Difference</i> | <i>620,807</i> | <i>809,290</i> | <i>1,047,143</i> | |
| Percent of Lane Miles Congested | Protected | 0.43 | 0.54 | 0.60 | -9.50 |
| | Non-protected | 0.39 | 0.53 | 0.64 | -17.1 |
| | <i>Difference</i> | <i>0.04</i> | <i>0.01</i> | <i>-0.04</i> | |

Exhibit 3.25: Mobility 2035 Environmental Justice Analysis Performance Results for EJI Aggregated Protected Populations Compared to Non-protected Populations

Public Involvement

Introduction

A proactive public participation process is vital to ensuring that 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.

The overall objective of the North Central Texas Council of Governments' public participation plan is that it is proactive, provides complete information, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement. While 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.

Public Participation Plan

The NCTCOG 2010 Transportation Public Participation Plan guides how and when public involvement will be carried out on various decisions made by the Regional Transportation Council.

Through the Language Assistance Plan, NCTCOG seeks to ensure that all residents have access to 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 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, meeting notices and several key documents are translated into Spanish. Reasonable effort is made to accommodate language translation requests if provided sufficient notice.

The Public Participation Plan addresses the following:

- Public involvement requirements
- Timelines for public comment on various documents
- Environmental justice
- Public notifications
- Public participation and coordination procedures for environmental documents
- Provisions for holding public meetings with abbreviated comment periods of no less than 72 hours and longer
- Title VI complaint procedures
- Language Assistance Plan

Public Involvement Strategies

Public meetings are held throughout the region in varying times and locations to request input on upcoming decisions of the RTC and inform the public of other planning activities. The NCTCOG Transportation Department maintains a database of individuals and groups wishing to receive notice of public meetings. Notice is sent to these individuals before every meeting and meetings are also advertised in the Texas Register and in local and minority newspapers. The Transportation Department also publishes monthly and quarterly newsletters, various technical brochures, and required planning documents each year which are made available to the public in both print and online formats.

Providing information through the Internet is an important strategy and the Website is updated on a regular basis to ensure accurate and timely information is available. As needed, surveys are conducted to determine public awareness and/or sentiment with regard to certain planning issues. In addition, communication with the media serves as a strategy for disseminating information to the public via media releases or personal contact with reporters.



The Transportation Department also participates in community events to educate the public on transportation and air quality initiatives. Recently, the Transportation Department has joined social media networks in an effort to further expand opportunities to provide education and a forum to receive public comments.



Finally, visualization tools like animations, maps, renderings, photos, and others are used when possible online, in presentations, and in publications to increase understanding among all audiences. Visual elements can also be especially beneficial for LEP persons.

Public Involvement for Mobility 2035

A variety of strategies were used to encourage public participation during the development of Mobility 2035. Information such as financial scenarios and goals, involvement opportunities, and overall development was featured in publications, on the NCTCOG Website, within social media, and in e-mails sent to individuals who have expressed an interest in NCTCOG information. NCTCOG held several public meetings and gave presentations to numerous community groups; a list of meeting dates and locations can be found in Appendix B.

During some public meetings, surveys, also available online, were conducted to gather input on the goals and financial scenarios for Mobility 2035. In compliance with the Public Participation Plan, public meetings were held 60 days and 30 days prior to Regional Transportation Council approval of Mobility 2035. A listing of public meetings held and community events at which development of Mobility 2035 was discussed is included in Appendix B. A concerted effort was made to hold at least one public meeting in each of the 12 counties that make up the Metropolitan Planning Area. All public meeting notices and comments received during the meetings associated with Mobility 2035 and the subsequent



2010 EPA Earthfest

Source: NCTCOG

air quality conformity determination, as well as related comments received through other means, are included in the [2011 Transportation Conformity](#). A listing of comments and responses related to Mobility 2035 are included in Appendix B.

Tribal Coordination

The North Central Texas Council of Governments recognizes the unique government-to-government relationship that the Federal Highway Administration has with Indian Tribal Governments. *Exhibit 3.26* displays all the federally recognized tribes that have an interest in the North Central Texas region. NCTCOG coordinates with the Federal Highway Administration to reach out to Indian Tribal Governments to allow them the opportunity to participate in the transportation planning process. Tribal contacts receive all public meeting notices, as well as electronic copies of our Mobility Matters newsletter, to keep them involved in the transportation decision-making process and informed about transportation planning efforts and ongoing opportunities to be involved and provide input.

| American Indian Tribal Interests in Dallas-Fort Worth Metropolitan Planning Area | | |
|--|--------------------------------|--|
| Absentee-Shawnee Tribe of Oklahoma | Apache Tribe of Oklahoma | Caddo Nation of Oklahoma |
| Choctaw Nation of Oklahoma | Comanche Nation of Oklahoma | Kialegee Tribal Town |
| Kickapoo Traditional Tribe of Texas | Kiowa Indian Tribe of Oklahoma | Mescalero Apache Tribe |
| Muscogee (Creek) Nation of Oklahoma | Poarch Band of Creek Indians | Pokagon Band of Potawatomi Indians of Michigan |
| Quapaw Tribe of Indians | The Delaware Nation | Thlopthlocco Tribal Town |
| Tonkawa Tribe of Indians of Oklahoma | Wichita and Affiliated Tribes | |

Exhibit 3.26: Dallas-Fort Worth MPA Regional Tribal Interests

Summary

A transportation system that does not provide enhanced mobility and accessibility for all residents of the region is ineffective at improving the quality of life for residents and ensuring the economic vitality of the region. For this reason, the RTC uses several approaches to ensure the social considerations of Mobility 2035.

This multi-step process includes actively seeking the public's participation in the development of recommendations provided in Mobility 2035 and a thorough analysis of those recommendation's impacts on protected populations.

This process has guided recommendations that contribute to a quality of life for all residents and provides access to jobs and reduces congestion.