



DEMOGRAPHIC FORECAST STUDY

for the FM Metropolitan Area

Prepared for the
Fargo-Moorhead Metropolitan
Council of Governments

JUNE 2017

TABLE OF CONTENTS

Introduction.....	1
Study Area.....	1
Study Objectives.....	2
Study Process	3
Public Input.....	4
Consistency Review.....	4
Study Area Growth	6
School Enrollment	7
Residential Building Permits.....	9
Methodology Design	11
Stakeholder Interviews	11
Growth Factors	14
Methodological Alternatives	15
Forecast Scenarios.....	15
Large Area Forecast Methodology	15
Small Area Forecast Methodology.....	16
Employment Forecast Methodology	16
Forecast Development & Refinement.....	16
Population Forecasts.....	17
Household Forecasts.....	22
Household Size Forecast	25
Jobs Forecast.....	27
APPENDIX A: LIST OF ASSUMPTIONS	
APPENDIX B: DEMOGRAPHIC FORECASTS	
APPENDIX C: TRAVEL DEMAND MODEL DEVELOPMENT PROCESS	

LIST OF FIGURES

Figure 1: Fargo-Moorhead Metropolitan Council of Governments Planning Area.....	2
Figure 2: Study Process	3
Figure 3: 2015 Population Estimates	5
Figure 4: Summary of Previous LRTP Demographic Forecasts	5
Figure 5: Historic Live Births	6
Figure 6: Historic Mortality	6
Figure 7: Natural Increase.....	7
Figure 8: Summary of Enrollment Projections	9
Figure 9: Building Permits Issued by Type and Jurisdiction	10
Figure 10: Overall Population Growth Forecasts by Scenario (2015 to 2045)	17
Figure 11: MSA Population Distribution by Age Cohort (2015).....	19
Figure 12: MSA Population Distribution by Age Cohort (2025 Most Likely Scenario)	19
Figure 13: MSA Population Distribution by Age Cohort (2025 Best Case Scenario)	20
Figure 14: MSA Population Distribution by Age Cohort (2045 Most Likely Scenario)	20
Figure 15: MSA Population Distribution by Age Cohort (2045 Best Case Scenario)	21
Figure 16: Overall Household Growth Forecasts by Scenario (2010 to 2045)	22
Figure 17: Overall School Population Forecasts by Scenario (2015 to 2045).....	24
Figure 18: Overall Distribution of Household Size by Scenario (2015 to 2045).....	26
Figure 19: Overall Jobs Growth Forecasts by Scenario (2015 to 2045).....	27

LIST OF TABLES

Table 1: Cities and Townships Included in Study Area.....	1
Table 2: Data Needs and Sources	3
Table 3: Primary City School District Historic Enrollment.....	8
Table 4: Building Permits Issued by Jurisdiction	9
Table 5: Fargo, West Fargo, Moorhead and Dilworth Building Permits Issued by Type	10
Table 6: Methodological Alternatives Summary	15
Table 7: Most Likely Scenario Population Forecasts by Jurisdiction (2015 to 2045).....	18
Table 8: Best Case Scenario Population Forecasts by Jurisdiction (2015 to 2045).....	18
Table 9: Small Area Most Likely Scenario Population Forecasts (2015 to 2045).....	21
Table 10: Small Area Best Case Scenario Population Forecasts (2015 to 2045).....	21
Table 11: Most Likely Scenario Household Forecasts by Jurisdiction (2015 to 2045).....	23
Table 12: Best Case Scenario Household Forecasts by Jurisdiction (2015 to 2045).....	23
Table 13: Small Area Most Likely Scenario Household Forecasts (2015 to 2045).....	24
Table 14: Small Area Best Case Scenario Household Forecasts (2015 to 2045).....	24
Table 15: Most Likely Scenario School Population Forecasts by Jurisdiction (2015 to 2045)	25
Table 16: Best Case Scenario School Population Forecasts by Jurisdiction (2015 to 2045)	25
Table 17: Most Likely Scenario Percentage of Households by Size for the MSA (2015 to 2045)	26
Table 18: Best Case Scenario Percentage of Households by Size for the MSA (2015 to 2045)	26
Table 19: Most Likely Scenario Jobs Forecasts by Jurisdiction (2015 to 2045)	28
Table 20: Best Case Scenario Jobs by Jurisdiction (2015 to 2045).....	28
Table 21: Most Likely Scenario Jobs per Capita for 2015, 2025, and 2045.....	29
Table 22: Best Case Scenario Jobs per Capita for 2015, 2025, and 2045.....	29

INTRODUCTION

The Fargo-Moorhead Metropolitan Council of Governments (Metro COG) develops demographic forecasts for the Fargo-Moorhead metropolitan area every five years as part of the long-range transportation planning process. These demographic forecasts are also very important for local units of governments and other entities to support other ongoing planning efforts.

Population projections developed in this report will support the update of Metro COG's 2045 Long Range Transportation Plan (LRTP). Beyond supporting core metropolitan-level transportation planning, all subsequent subarea and corridor level planning completed by Metro COG is supported by the demographic projections and resulting travel demand forecasting.

STUDY AREA

Defining the Study Area

Throughout this document, references are made to the Metropolitan Planning Area (MPA) and the Metropolitan Statistical Area (MSA). The Metropolitan Planning Area is the designated study area for Metro COG. The Metropolitan Statistical Area is a Census Bureau defined region consisting of counties that contain at least one urban area with a population of at least 50,000. The Fargo-Moorhead MSA includes Cass County, North Dakota and Clay County, Minnesota.

Metropolitan Planning Area

The Metro COG Metropolitan Planning Area (MPA) is comprised of 30 townships from within Cass County, North Dakota and Clay County, Minnesota. Since the last demographic forecast and travel demand model were completed, the cities of Casselton, Kindred, Hawley, Barnesville, and 14 additional townships have been added to the Metro COG planning area. Table 1 shows the cities and townships within the MPA, and for which forecasts are provided.

For the purposes of the 2016 Demographic Forecast, cities were designated as either a *Primary City* or a *Smaller City*. Forecast methodologies for Primary Cities will use the Cohort-Component approach which results in population forecasts broken down into five-year age groups by sex. Forecast methodologies for Smaller Cities will use the Structural Model approach which results in total population forecasts. These methodologies are explained in greater detail later in this document.

Table 1: Cities and Townships Included in Study Area

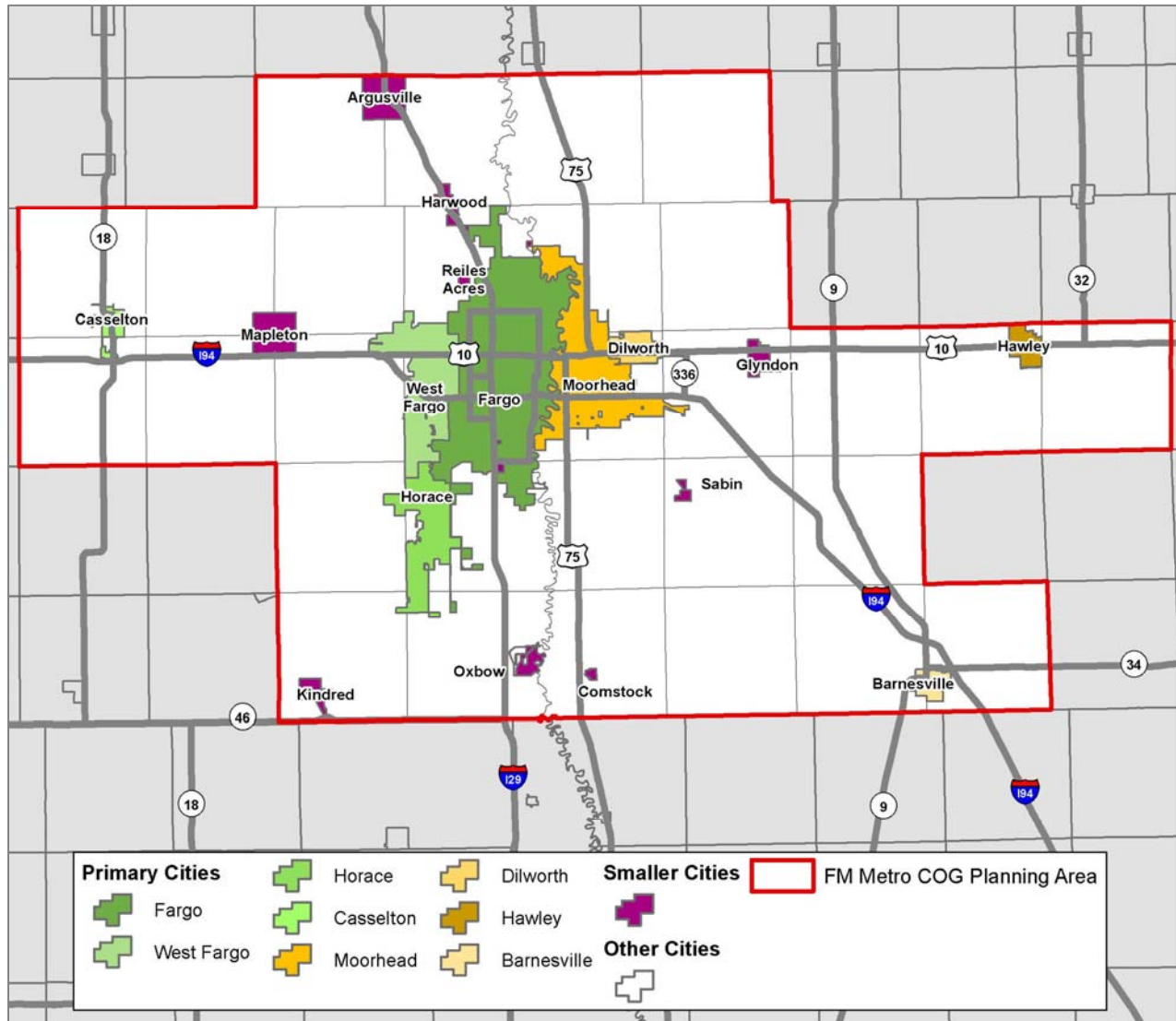
North Dakota			Minnesota		
Cities	Townships		Cities	Townships	
Fargo ^P	Berlin	Mapleton	Moorhead ^P	Krages	Kurtz
West Fargo ^P	Harwood	Warrant	Dilworth ^P	Morken	Elmwood
Harwood ^S	Casselton ^N	Normanna ^N	Glyndon ^S	Oakport	Elkton ^N
Horace ^P	Harmony ^N	Stanley	Sabin ^S	Moland	Holy Cross ^N
Mapleton ^S	Raymond	Pleasant ^N	Hawley ^{PN}	Glyndon	Alliance ^N
Casselton ^{PN}	Reed		Barnesville ^{PN}	Riverton ^N	Barnesville ^N
Kindred ^{SN}	Everest ^N			Hawley ^N	Humboldt ^N
Reile's Acres ^S	Durbin ^N			Eglon ^N	Moorhead

^PPrimary City

^SSmaller City

^NNew City/Township for 2016 Demographic Forecasts

Figure 1: Fargo-Moorhead Metropolitan Council of Governments Planning Area



STUDY OBJECTIVES

There are four primary objectives for this study:

- » **Review:** Evaluate assumptions and forecasts of the 2012 Demographic Forecast Study in the context of recent trends affecting the Fargo-Moorhead metropolitan area.
- » **Collect:** Identify needed data and procedures to prepare Metro COG's Travel Demand Model (TDM) for use in developing the 2045 LRTP.
- » **Forecast:** Establish new forecast methodologies for a demographic forecast to 2045.
- » **Assign:** Allocate household and employment data to Traffic Analysis Zones (TAZs) for the TDM update.

A more thorough discussion of these activities is included later in this report.

STUDY PROCESS

The Demographic Forecast Study followed the process laid out in Figure 2. Demographic forecast studies require a robust set of data (Table 2), including existing and anticipated employment levels; population, including live births and deaths statistics; the number and size of households; building permit records, and primary, secondary, and post-secondary education enrollment. These datasets were used to determine recent growth and perform a consistency review with previous demographic forecasts and ultimately informed the forecasts included in this study.

Figure 2: Study Process



Table 2: Data Needs and Sources

Data Need	Description	Sources
Employment	Number and location (TAZ) of employment.	Bureau of Economic Analysis, Bureau of Labor Statistics, InfoGroup USA
Population	Number of people residing in each city and county in the metropolitan area.	Census Bureau: Decennial Census, Census Estimates Program, American Community Survey.
Number of Households	Number and location (TAZ) of households; household type (single-family, multi-family).	Building permit data, water usage and other local indicators provided by each city in the metropolitan area.
Size of Households	Number of 1-person, 2-persons, 3-persons and 4+-person households.	Census Bureau's Decennial Census, 2015 Census Estimates, American Community Survey, InfoGroup USA.
Primary and Secondary Enrollment	Enrollment data by grade.	Provided by each school district in the metropolitan area.
Post-Secondary Enrollment	Enrollment data by entering class.	Provided by each university and college in the metropolitan area.
Live Births	Annual number of live births, fertility rates.	National Center for Health Statistics, Minnesota Department of Health, North Dakota Department of Health
Deaths	Annual number of deaths, mortality rates	National Center for Health Statistics, Minnesota Department of Health, North Dakota Department of Health

PUBLIC INPUT

Given the technical nature of the Demographic Forecast Study, the majority of the public input into the development of the work product came through face-to-face meetings with key stakeholders early in the process to help form the foundation of the methodology development. The consultant and Metro COG staff engaged with representatives from the following organizations in order to develop a full understanding of demographic trends and factors influencing demographic change in the metropolitan area:

- » Greater Fargo-Moorhead Economic Development Corporation
- » Metro COG Full and Associate Members
- » Metropolitan School Districts
- » NDSU, MSUM, North Dakota State College of Science, and Concordia
- » Lutheran Social Services
- » Cass and Clay County Social Services
- » Fargo-Moorhead Homebuilders Association
- » Fargo-Moorhead Area Association of Realtors

A Study Review Committee (SRC) comprised of technical staff from the Advanced Traffic Analysis Center (ATAC), Cass County, Clay County, Dilworth, Fargo, Moorhead, West Fargo, North Dakota Department of Transportation, Minnesota Department of Transportation, and Metro COG was involved throughout the consistency review, methodological design, and forecast developments of the study process. They met in four working sessions to provide input and confirm the results of the study process.

At the end of the study process, this final report was made available for public review by advertising a formal public comment period regarding the final outcomes of the study process.

CONSISTENCY REVIEW

The Census Bureau provides population estimates through both the Annual Estimates Program and the American Community Survey. To prepare the 2016 Demographic Forecast Study, both population estimates for 2015 were compared against estimates completed in the 2012 Demographic Forecast Study (Figure 3). The U.S. Census Bureau Annual Estimate for 2015 was 8,006 people, or 3.5 percent, greater than Scenario A, the scenario approved by the Metro COG Policy Board for use in the 2040 LRTP. As shown in Figure 4, as population projections get closer to the actual projection year, accuracy improves. This comes from updated assumptions based on new data and trends.

Figure 3: 2015 Population Estimates

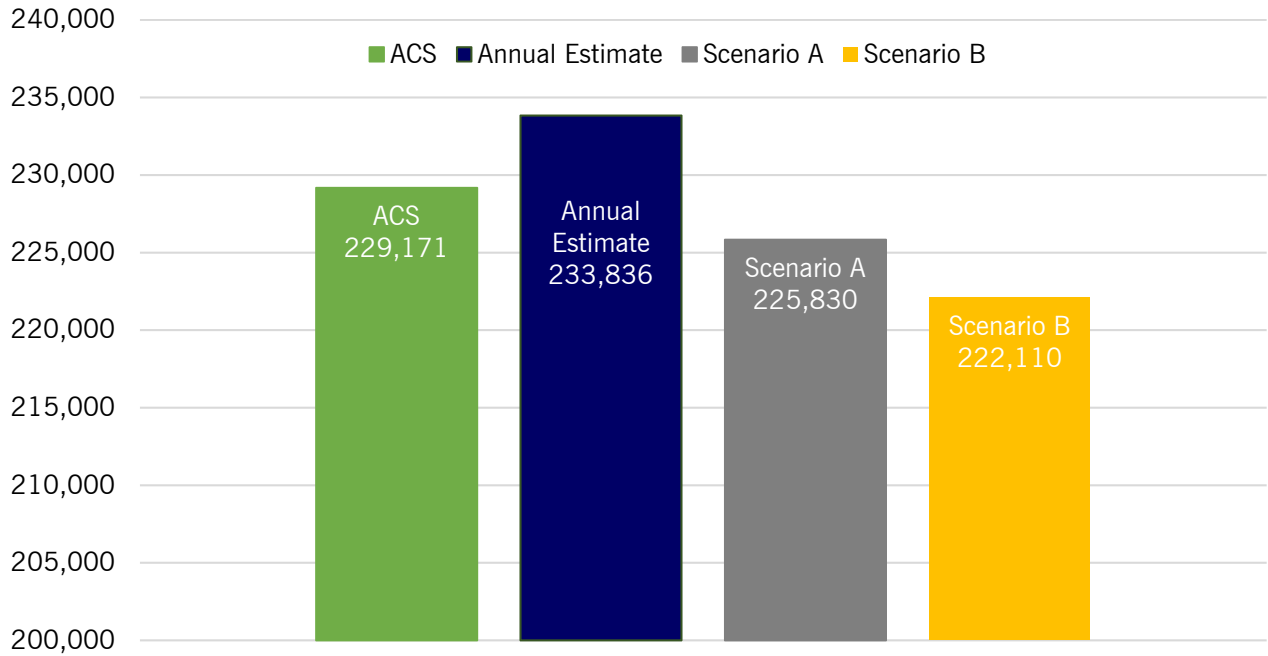
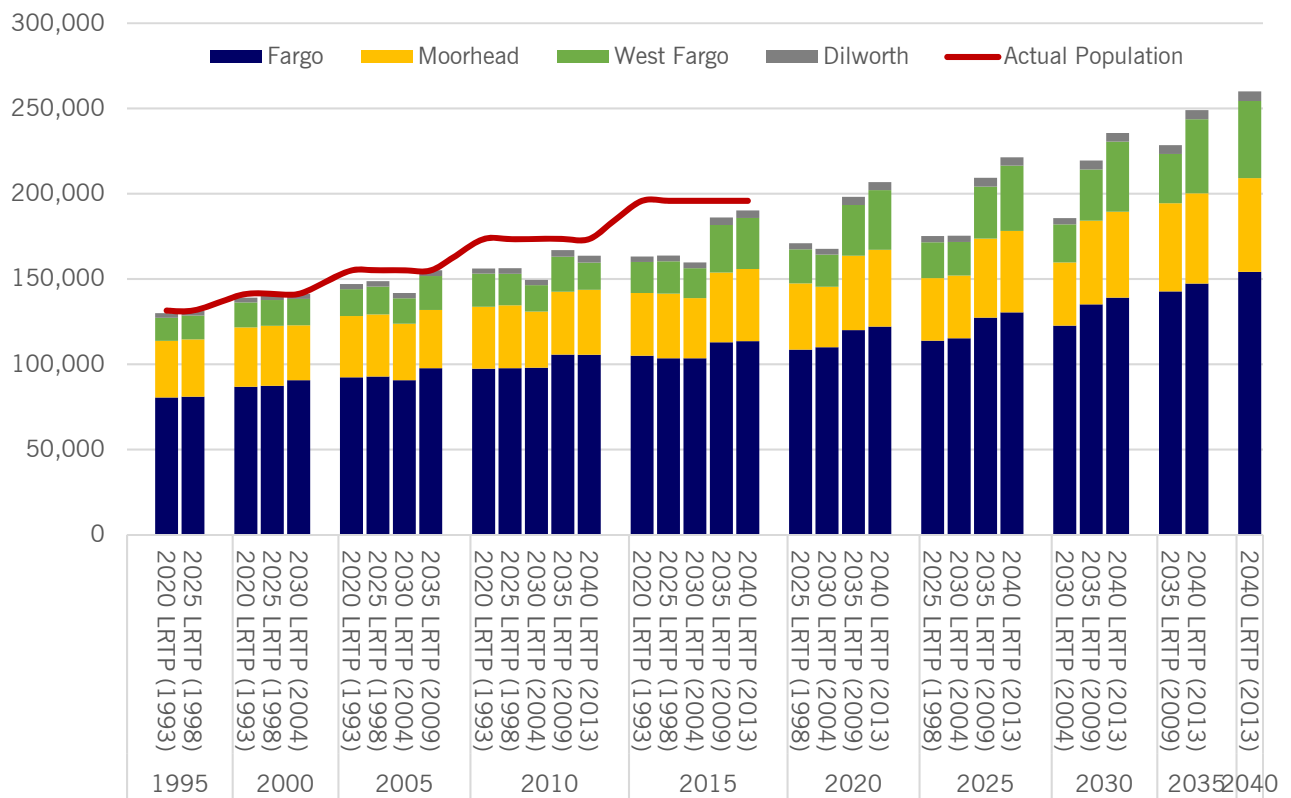


Figure 4: Summary of Previous L RTP Demographic Forecasts



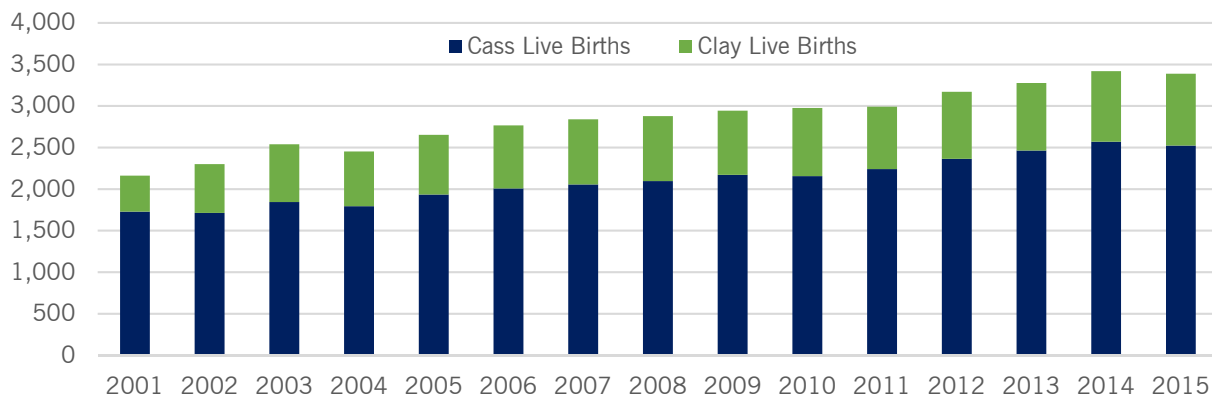
STUDY AREA GROWTH

The demographic forecasts completed for the Fargo-Moorhead metropolitan area include two major components: natural increase, comprised of births and deaths, and net migration, comprised of people moving into and out of the metropolitan area. These two components have undergone significant change since the 2012 Demographic Forecast.

Births

The number of births in the region since the 2010 Decennial Census significantly surpassed 2012 forecast levels. Live births from 2010 to 2015 were 16,024, which is 8.8 percent higher than Scenario A's forecasted births (14,730). It is unlikely that these additional births were a result of increased birth rates, but more likely the case that more females of childbearing age moved into or remained in the region during this time. Figure 5 shows live births in Cass and Clay counties from 2001 to 2015.

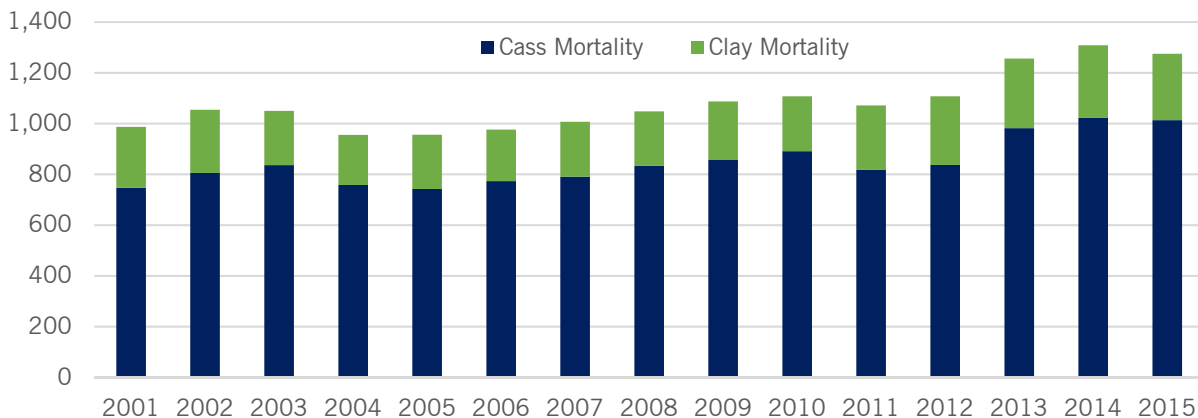
Figure 5: Historic Live Births



Deaths

The actual mortality rate in Cass and Clay counties was lower than assumed in the 2012 Demographic Forecast. Scenario A's forecasted deaths for 2010 to 2015 was 8,720, but actual deaths were 25.4 percent lower for the same period at 6,505. Figure 6 shows mortality in Cass and Clay counties from 2001 to 2015.

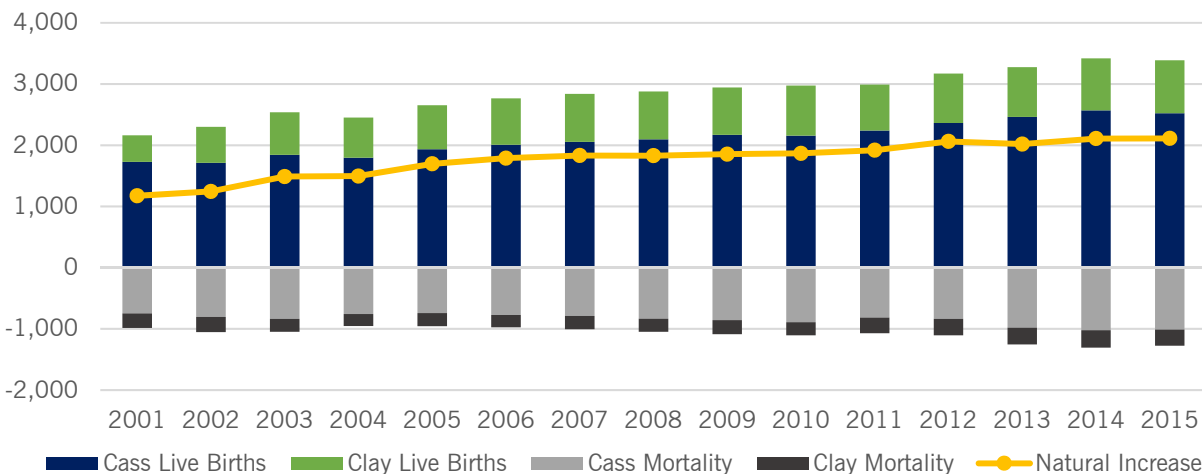
Figure 6: Historic Mortality



Natural Increase

The result of the lower mortality rate can account for approximately 27 percent of the difference between the Census Bureau Annual Estimate for 2015 and the Scenario A forecast for 2015. Much of the remaining 73 percent of the difference can be accounted for by a combination of lower than expected out-migration of people in their twenties and their subsequent fertility and higher than expected in-migration. This is substantiated by IRS migration statistics. The lower number of deaths (2,215) and the higher number of births (1,294) would account for 3,509 of the approximately 8,000 more people in the Fargo-Moorhead metropolitan area than forecasted. Figure 7 shows the natural population increase in Cass and Clay counties from 2001 to 2015.

Figure 7: Natural Increase



Net Migration

Net migration is not based on easily accessible data, but rather a set of assumptions including foreign immigration, net migration of college students, retention of recently graduated college students (resulting in lower out-migration), and net migration for specific cohorts like those over sixty or young families.

North Dakota's economy expanded from 2011 to 2015 as a result of strong commodity prices (both oil and agricultural), which resulted in lower than expected out-migration and higher than expected in-migration. This, combined with the related age-specific fertility rates of those who chose to stay in the community, can account for most of the remaining difference between the 2015 Census estimates and the 2015 forecast from the 2012 Demographic Forecast Study. (The application of the birth rate suggests 2,300 additional females, which together with their male partner accounts for a total 4,600 increased migration.)

SCHOOL ENROLLMENT

This study focused on the four public school districts found in Fargo, West Fargo, Moorhead, and Dilworth. Since 2010, K-12 school enrollment in the four districts has grown 17.2 percent, from 24,288 in 2010 to 28,454 at the end of the 2015-2016 school year. It is important to note that change in student enrollment in a given year does not equate to change in population for the same year because actual population includes age groups not included in the school population. The most significant additional component are pre-school age children who are in the community. Even in the event that no additional children were to move into the area, a

school district would still see the enrollment growth of the next five years if the number of pre-school age children is larger than those in the high school grades. Table 3 shows the school district enrollment for each of the four public school districts from the 2010-2011 school year through the 2015-2016 school year.

Table 3: Primary City School District Historic Enrollment

School Year	Fargo	West Fargo	Moorhead	Dilworth-Glyndon-Felton	Total
2010-2011	10,307	7,212	5,388	1,381	24,288
2011-2012	10,365	7,535	5,395	1,421	24,716
2012-2013	10,672	8,052	5,556	1,465	25,745
2013-2014	10,775	8,548	5,648	1,511	26,482
2014-2015	10,853	9,079	5,891	1,575	27,398
2015-2016	10,995	9,604	6,217	1,638	28,454

Enrollment Projections

Enrollment projections were provided by each school district listed below.

Fargo Public Schools

Since the 2010-2011 school year, Fargo Public Schools' (FPS) enrollment has grown 6.7 percent, or nearly 700 students, to 10,995; this is an average annual growth rate of 1.1 percent. FPS enrollment projections through the 2020-2021 school year expect to continue to grow at annual growth rates above one percent, to 11,920 students by the 2020-2021 school year.

West Fargo

Of the four primary school districts, West Fargo Public Schools (WFPS) has experienced the largest growth since the 2010-2011 school year. Since 2010-2011, WFPS has grown 33.2 percent, or nearly 2,400 students; this is an average annual growth rate of 5.5 percent. Enrollment forecasts through the 2020-2021 school year expect the annual growth rate to peak in the 2016-2017 school year and slowly decline, adding between 550 and 605 students each year. By the 2020-2021 school year, WFPS will surpass 12,500 students and become the largest school district in the metropolitan area.

Moorhead

Moorhead Public Schools' (MPS) enrollment has grown 15.4 percent, 830 students, since the 2010-2011 school year. This is an average annual growth rate of 2.6 percent. The MPS enrollment projections expect average annual growth around three percent through the 2020-2021 school year. While this is lower than the 2014-2015 and 2015-2016 annual growth rates, it is still significantly higher than growth rates experienced for many previous school years. The expected enrollment for the 2020-2021 school year is 7,250.

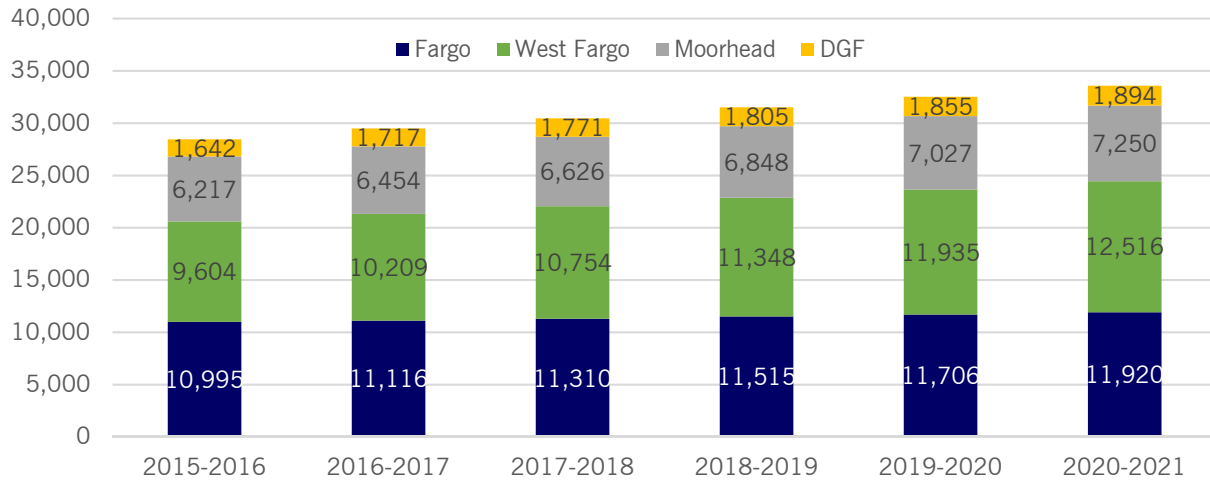
Dilworth-Glyndon-Felton

Dilworth-Glyndon-Felton (DGF) is a combined school district in Minnesota that includes the primary city of Dilworth and the smaller city of Glyndon. Felton is outside the Metro COG planning area. DGF's enrollment has grown 20.5 percent, 279 students, since the 2010-2011 school year, or an average of 3.4 percent annually. The 2020-2021 enrollment projections expect nearly 1,900 students for an average annual growth rate around 2.9 percent, which is slightly lower than growth rates experienced since 2011.

Summary of Enrollment Projections

Figure 8 shows the summary of enrollment projections. By the 2020-2021 school year, there is expected to be more than 33,500 primary and secondary students in the metropolitan area, an increase of approximately 18 percent from 2015-2016 enrollment.

Figure 8: Summary of Enrollment Projections



RESIDENTIAL BUILDING PERMITS

Building permit data provides an estimation of the gross number, location and type of dwelling units being constructed within the metropolitan area, allowing an understanding of where new growth is concentrated and the anticipated number and size of new households. Using the 2010 Decennial Census and detailed building permit data allows a fairly accurate estimate of current dwelling units for each primary city. Coupling these data with occupancy rates, existing home sales, and other relevant data allows an estimate of key household characteristics.

Number and Location of Building Permits Issued

From 2010 to 2015, the number of building permits issued in the metropolitan area surpassed 14,000, with 26.5 percent of permits issued in 2014 alone. Building permits issued in Fargo made up 59.2 percent of all permits in the metropolitan area. Table 4 shows the building permits issued by jurisdiction from 2010 to 2015.

Table 4: Building Permits Issued by Jurisdiction

Year	Fargo	% Of Total	Moorhead	% Of Total	West Fargo	% Of Total	Dilworth	% Of Total	Total
2010	841	66.85%	160	12.72%	244	19.40%	13	1.03%	1,258
2011	966	66.76%	161	11.13%	305	21.08%	15	1.04%	1,447
2012	1,135	53.04%	149	6.96%	839	39.21%	17	0.79%	2,140
2013	1,691	57.60%	405	13.79%	809	27.55%	31	1.06%	2,936
2014	2,271	61.02%	449	12.06%	976	26.22%	26	0.70%	3,722
2015	1,428	55.69%	505	19.69%	604	23.56%	27	1.05%	2,564
Total	8,332	59.23%	1,829	13.00%	3,777	26.85%	129	0.92%	14,067

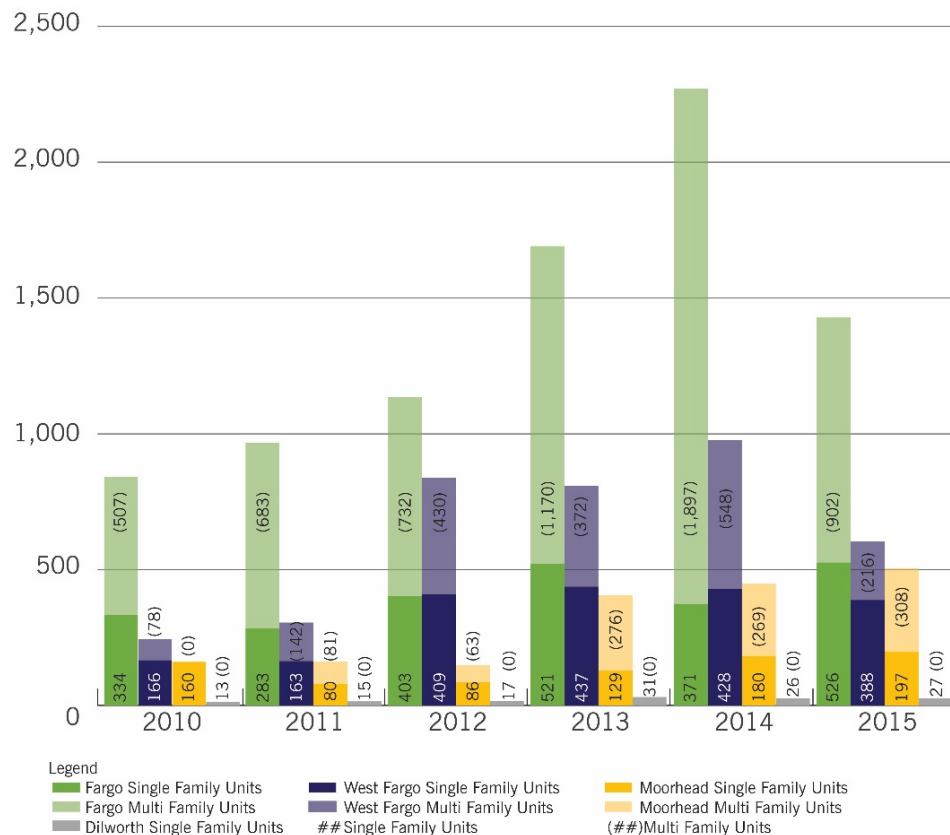
Type

Residential building permits are divided into two general types: single-family and multi-family. From 2003 until 2010, the majority of permits issued in the metropolitan area were single-family building permits. However, since 2011, multi-family building permits have constituted 63.2 percent of all permits issued. If typical patterns of moving into single-family housing continues as family formation happens, a more drastic shortage in the single-family starter home market may occur. However, multi-family housing may become a long-term housing solution for families if single-family housing costs continue to increase, especially if interest rates rise. Table 5 shows the total building permits issued in Fargo, West Fargo, Moorhead and Dilworth by type from 2010 to 2015. Figure 9 shows the building permits issued by type and jurisdiction.

Table 5: Fargo, West Fargo, Moorhead and Dilworth Building Permits Issued by Type

Year	Single Family	% Of Total	Multi Family	% Of Total	Metro Total Units
2010	673	53.5%	585	46.5%	1,258
2011	541	37.4%	906	62.6%	1,447
2012	915	42.8%	1,225	57.2%	2,140
2013	1,118	38.1%	1,818	61.9%	2,936
2014	1,008	27.1%	2,714	72.9%	3,722
2015	1,138	44.4%	1,426	55.6%	2,564
Total	5,393	38.3%	8,674	61.7%	14,067

Figure 9: Building Permits Issued by Type and Jurisdiction



METHODOLOGY DESIGN

STAKEHOLDER INTERVIEWS

The methodologies for this Demographic Forecast stem from an understanding of factors influencing the recent and future change in population, households, and jobs in the Fargo-Moorhead metropolitan area. As a first step in deepening this understanding, a series of interviews were conducted with local subject matter experts. These included individuals from economic development organizations; social service agencies; development, housing and real estate organizations; the FM Flood Diversion Authority; and small community representatives. The following are observations from these discussions about the most significant factors influencing future change within the region.

FM Flood Diversion

The 2012 Demographic Forecast included an assumption on the future construction of the FM Diversion. In the intervening years, the timetable for completion of construction has been delayed to 2025 (from 2021). Completion of area-wide flood protection is critical to the future stability of region's economy and population base. Some local economic development experts contend that if the diversion is not constructed, it would cause some existing and potential future businesses to locate elsewhere. Additionally, there are approximately 19,000 structures in the area that will have significant additional flood insurance costs in four years when the Federal Emergency Management Agency (FEMA) re-maps the 100-year flood elevation to 41 feet. Without the FM Diversion, those properties will be forced to pay flood insurance rates that may be as much as ten times their current rate, and a virtual moratorium on development could occur in much of the southwest metro area.

Economic Development and Job Growth

The Greater Fargo Moorhead Economic Development Corporation (GFMEDC) has recently completed a significant assessment of the current labor market and future job demand growth. The assessment noted that employment in the Fargo-Moorhead metropolitan area grew 24 percent between 2004 and 2014, despite the national downturn in the economy. With an increase of almost 8,000 jobs, the healthcare and education sectors were responsible for adding the most jobs over that time.

Full employment is typically considered to be when unemployment is approximately five percent. During the last ten years, unemployment within the Fargo-Moorhead metro area has never been higher than 4.3 percent. According to the GFMEDC consultant's research, in 2014 there were over 6,700 open jobs in the Fargo-Moorhead metro area. This includes both replacement of existing jobs due to turnover and newly created jobs. By the year 2019 they anticipate that the number of open jobs will grow to 30,000. In addition to the growing demand for workers, employers are finding there is a mismatch between the skills of available workers and the skills employers need. Complicating this more is the fact that, especially in the more skilled occupation categories, the region's wages lag behind the nation's. This means that recruiting workers into the region is especially challenging. Approximately 45 percent of the job demand over the next few years will be in the lower paying jobs such as those in the service, retail and transportation industries, and the remaining 55 percent will be in higher paying jobs such as those in the manufacturing, high tech, education, and health science industries. This is based on the assumption that current plans for FM Diversion construction are implemented.

Housing and Real Estate Development

Housing and Real Estate Development experts generally concur that the housing and real estate development market will remain strong over the next ten years, assuming the FM Diversion construction continues to move forward. They noted that the national economic downturn which began in 2008 had very little impact on the local market. However, there were several observations made about the type and location of housing development over the next few years:

- » Real estate, particularly apartments, is a good investment in the current economic climate. Essentially, they are a good risk compared to the stock market and typical interest generating investments.
- » Continued development and population growth in the Fargo-Moorhead metropolitan area is anticipated for the future because there are very few external factors seen to have a significant impact. Even high interest rates may not have a significant effect. The high cost of flood insurance for structures in the floodplain and a major natural disaster are two factors cited with the potential to reduce the growth rate.
- » Land costs, construction costs, and special assessments continue to increase, limiting the type of development that can be profitable. This is producing a shortage of newly constructed single family housing below the \$300,000 price point. Existing homes are becoming the only option for “affordable homes.” It is also affecting the cost of office space.
- » The buyer demand characteristics have changed from the past. For example, first time home buyers are not interested in “fixer-uppers” although they will buy starter homes. However, starter homes are more challenging to get into now due to obstacles like higher prices, higher down payments, and high debt loads.
- » Older homes nearer to the college campuses are more frequently becoming rentals instead of being sold to a new owner occupant. This pattern may spread to other parts of the metro area in the coming years.
- » There is a recent trend towards constructing single occupant one-bedroom apartments with high amenities that are aimed to appeal to more affluent renters. Some of these people are younger workers who prefer not to be tied to a mortgage or home maintenance.
- » The likelihood of a significant proportional increase in development in the Minnesota portion of the metro area is considered slim because of the perceived or real higher costs for living there. The draw to live in North Dakota seems to be the perception of cheaper costs, especially from lower income tax rates. The draw to live in Minnesota may be primarily the perception of better social service benefits.

Special Populations

There are several population sub-groups within the Fargo-Moorhead metropolitan area with their own patterns of change. These include young adults and college students, the elderly, and New Americans.

Young Adults and College Students

Young adults, which include those attending college and those moving directly into the workforce after graduating high school, have been a significant component of change in the Fargo-Moorhead metropolitan area. They were a key reason the 2015 metropolitan area population exceeded the forecast of the 2012 Demographic Forecast Study. Considering that the combined student enrollment of the three largest post-secondary educational institutions dropped by approximately 2,600 students between 2010 and 2015, this is even more significant. The impact of the young adult population in the metropolitan area is anticipated to be even greater

in the near-term. Three reasons for this outlook include the anticipated increase in post-secondary enrollment, the increased local base of graduating high school students, and ongoing initiatives to recruit more people for the metropolitan workforce.

- » North Dakota State University (NDSU), Minnesota State University Moorhead (MSUM), and Concordia accounted for 22,529 of the students enrolled in local post-secondary educational institutions in 2015. All three institutions have new initiatives underway to bring their combined target enrollment to 27,900 students.
- » Based on current and projected K-12 enrollment patterns, the West Fargo, Fargo, Moorhead, and Dilworth-Glyndon-Felton School Districts are anticipated to have graduated a combined 9600 young adults between 2016 and 2020.
- » Recent workforce development initiatives between local economic development leaders and post-secondary educational institutions will also encourage increased post-secondary enrollment levels to feed the strong demand for additional workforce that is continuing to growth in the metropolitan area.

Baby Boomers

The aging Baby Boomer population will exert a significant impact on future population patterns of change in the Fargo-Moorhead metropolitan area. In 2010, this sub-group of 47,933 people represented 23 percent of the total MSA population. The oldest of the Baby Boomers are just turning 70 years old this year. In the next ten years, nearly half of the Baby Boomers will be over 70 years old and undergoing significant life changes such as losing a spouse, leaving the workforce, and changing residence.

The probability of dying is three times higher for the population over 80 as compared to the 65 to 69 year old population. Since the majority of the Baby Boomer population will have reached that age of significantly increasing mortality by the year 2045, the net natural increase in the total MSA population will approach zero. Any increase in MSA population will be increasingly dependent on net in-migration.

New Americans

New Americans have often been discussed as a significant element in the Fargo-Moorhead metropolitan area's population growth. New Americans, by definition, are people coming to the United States with no U.S. citizenship at birth. There are two main categories of immigrants: those who enter the United States as refugees, asylees, and unaccompanied alien children, and those who have entered the United States legally or illegally on some other basis. Available data to identify the number refugees, asylees, or unaccompanied alien children who have come to the Fargo-Moorhead area is limited. Available data to identify the number of people who have come to the Fargo-Moorhead area on some other basis is even more limited. The best data available on refugees, asylees, and unaccompanied alien children is from Lutheran Social Services (LSS) because of their involvement in the resettlement program. During the Federal Fiscal Years 2011-2015, 1,787 people were resettled to the Fargo-Moorhead metropolitan area. Based on best estimates available from LSS, it is believed that these resettlement immigrants represent from 15 to 18 percent of the total net migration. Based on statistics pertaining to English Language Learners in the Fargo-Moorhead metropolitan area, there is some suggestion that between 40 percent and 60 percent of the total immigrant population are refugees.

Small Community Growth Capacity

Representatives from several of the small communities in the Metro COG planning area shared information on their communities' capacity for growth. This information, coupled with other data collected, led to the following observations:

- » Barnesville has been growing at a consistent pace over the past couple of decades. They have sufficient utility capacity and land to continue to grow at this rate.
- » Hawley has experienced nearly 18% growth in the last two decades and expects this to continue. A new subdivision was recently approved. The city has planned for additional growth and has sufficient utility capacity through 2030.
- » Sabin has some limitations on growth due to floodplain issues and a lack of land available for development.
- » Glyndon has significant amounts of platted land available for development but has been growing very slowly over the last five years. Some recent activities in the community suggest there might be slightly faster growth in the short term future.
- » Mapleton is anticipating a surge in growth in the next few years. It has potential for long-term growth if flood protection is developed. The current estimated number of additional lots available for development is approximately 150.
- » Casselton has been growing at a slow pace in the last five years. There is limited land available for development, some of which is currently being developed. The estimated number of additional lots to be developed in the next decade is approximately 30.
- » Horace has had a sewage treatment limitation on its potential for growth. A very recent agreement with the City of Fargo will address this limitation. There are over 400 lots which could potentially be developed when a physical connection to the Fargo sewage collection system is constructed.

GROWTH FACTORS

The primary growth factors affecting future population and household change for the entire MSA are anticipated to be the current mortality rate and live birth rate. Based on the current age structure of the MSA, without the effects of net in-migration, these two factors would result in a net decline in population. However, the increased retention of females in prime child-bearing years, which was apparent in the last five years, will delay the onset of a natural decrease in population.

The most significant additional factor anticipated to impact the change in population and households within the next ten years is a continued net in-migration of people of all ages. During the last five years the largest age cohort increases due to net in-migration were those age 25 to 34, and those age 70 to 74 (not in group quarters). The continued retention of those 25 to 34 is anticipated because of the strong local economy with great job opportunities. The continued in-migration and retention of those age 70 to 74 (not in group quarters) is anticipated because of the large existing bubble of baby boomers in the MSA, the large number of baby boomers in the outlying counties, and the increasing level of amenities, services, and housing options expected to be available to them.

The most significant factors which could change the future pattern of growth would be continued delay in construction of the FM Diversion and any weakness in the existing home sales market.

METHODOLOGICAL ALTERNATIVES

Population forecasting methods can be classified into three broad categories: trend extrapolations, cohort component methods and structural models.

Table 6: Methodological Alternatives Summary

Method	Description	Disadvantages
Trend Extrapolations	» Based on the continuation of observed historical trends.	<ul style="list-style-type: none"> » Unable to account for differing demographic characteristics. » Cannot age cohort level or other demographic characteristics in the projection. » Accuracy is dependent on a consistent pattern of change throughout the forecast period.
Cohort-Component	» Divides the population into age-sex groups or birth cohorts and accounts for the fertility, mortality, and migration behavior of each cohort. Flexible to allow for variances of demographic characteristics and changes in the factors influencing population change over the life of the forecast period.	<ul style="list-style-type: none"> » Needs detailed demographic characteristics. » Needs a larger base population (2,500 or more) to be reasonably accurate.
Structural Models	» Rely on observed relationships between demographic and other variables, such as employment, housing stock, and land use. Adaptive to small areas using available factors of growth, such as capacity for growth and certain predictive variables.	<ul style="list-style-type: none"> » Unable to provide forecasts about detailed demographic characteristics such as age structure or household composition. » Rely on symptomatic variables. If quality of the symptomatic variables is limited, the quality of the forecast will also be limited.

FORECAST SCENARIOS

As part of the update to the demographic forecasts for the Fargo-Moorhead metropolitan area, two forecast scenarios were developed. Past forecasts sometimes developed three scenarios, which essentially amounted to low, medium, and high scenarios. Given that the primary purpose of these forecasts is to provide input data for the next version of the TDM, a low forecast does not have any value. Therefore, the Study Review Committee determined that a “Most Likely” and a “Best Case” scenario were appropriate for the forecasts.

The Most Likely scenario is based on the premise that significant factors affecting future growth are controlled primarily by existing conditions, but that some factors of growth are clearly anticipated to change. The result will be future population, housing, and employment forecasts that have been determined the most probable to occur.

The Best Case scenario is based on the premise that all significant factors affecting future growth align in a positive way to provide the best possible realistic conditions for growth. The result will be future population, housing, and employment forecasts that are as high as what may be reasonably expected to be possible.

LARGE AREA FORECAST METHODOLOGY

The large area population and household forecasts were produced using the Cohort-Component method. Assumptions approved by the Study Review Committee were used to govern the model for both scenarios (see Appendix A). In Cohort-Component methodology, the components of change (fertility, mortality, and net

migration) are calculated separately for each birth cohort (persons born in a given year). The base population is advanced each year by using forecasted survival rates and net migration. Each year, a new birth cohort is added to the population by applying the projected fertility rates to the female population. The forecast results were compiled for the five-year periods from 2020 to 2045.

SMALL AREA FORECAST METHODOLOGY

The small area population and household forecasts were produced using a Structural Model approach. This is an allocation method based primarily on existing population and household patterns, and capacity for growth. The small area forecasts were generated by a proportional distribution of the total county growth not accounted for by the growth in the large areas. Then, individual small area growth was refined based on their capacity for growth, past growth patterns, and other available information.

EMPLOYMENT FORECAST METHODOLOGY

Employment forecasts were produced based on existing employment patterns, anticipated economic sector growth, and other factors determined after analyzing 2015 employment data. Employment data from 2001 to 2015 from various sources were reviewed and the methodology used by the recently completed GFMEDC Workforce Study was scrutinized. Employment data obtained through a state-wide data purchase from InfoGroup USA was also reviewed.

A 2015 jobs baseline was developed that closely matched the number of jobs estimated by the Workforce Study. The jobs forecast was developed by applying the proportion of 2015 jobs to working age population in 2015 to the future year working age population. Distribution of jobs by category was established by applying the same ratio of job types identified in the InfoGroup USA employment data for 2015 to future year jobs forecasts.

FORECAST DEVELOPMENT & REFINEMENT

After completing the consistency review of the past forecast and developing appropriate assumptions for the Best Case and Most Likely scenarios, draft forecasts were developed for population and households for each five-year period from 2020 to 2045. The new lower mortality rates were applied to the forecast, and for the Best Case scenario, a slightly higher birth rate was applied. The draft forecasts of both scenarios were presented at the third Study Review Committee meeting, and based on the discussion at the meeting, minor changes were made to the methodology and revised forecasts were presented for review and approval at the fourth Study Review Committee meeting.

An unanticipated change to the development situation in the Fargo-Moorhead metropolitan area occurred when the City of Horace and the City of Fargo reached an agreement that would allow the City of Horace to obtain additional sewage treatment capacity to handle their potential household growth. Additionally, the West Fargo School District announced a land swap and plans to begin building a new school in the City of Horace. These events resulted in the need to reconsider the likelihood and rate of short-term growth in the City of Horace. Based on conversations with landowners and developers, the City of Horace anticipated a high rate of growth during the short term. After a series of meetings with Horace officials, and a review of the Southwest Growth Area study, the population and household growth forecasts were modified to accommodate the anticipated additional growth in Horace by 2025. The Best Case scenario assumed substantial new development would be

underway by the fall of 2017 and that short term growth rates could be as similar to those experienced by West Fargo in recent years. After the FM Diversion is completed in 2025, it is anticipated that the market and capacity for growth in West Fargo and Fargo will increase and that the Horace rate of development will slow substantially.

POPULATION FORECASTS

The Most Likely population scenario provides an overall population increase for the MSA from the 2015 Demographic Forecast Study estimate number of 232,900 to 330,550 in 2045. This represents a 42.9 percent increase in the total population of the MSA between 2015 and 2045. The Best Case population scenario provides an overall population increase for the MSA from the 2015 Demographic Forecast Study estimate number of 232,900 to 342,360 in 2045. This represents an overall increase of 47.0 percent between 2015 and 2045. Figure 10 shows the overall population growth forecasts by scenario.

Figure 10: Overall Population Growth Forecasts by Scenario (2015 to 2045)

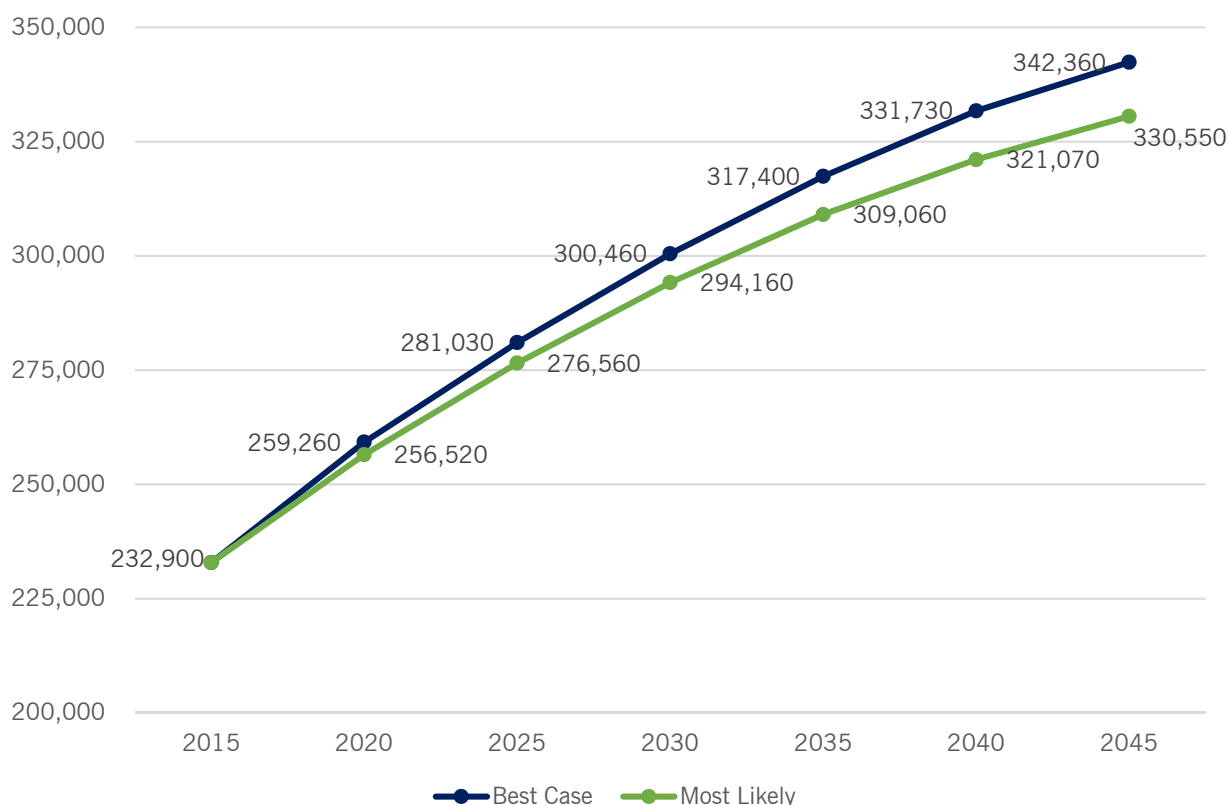


Table 8 summarizes the Best Case scenario growth patterns for each jurisdiction for each five-year period of the forecast. Table 7 summarizes the Most Likely scenario growth patterns for each five-year period of the forecast.

The detailed (age-cohort specific) population forecasts for the jurisdictions included in Table 8 and Table 7 can be found in Appendix B. There are variations in the rate of growth within each geographic area due to a variety of factors including the indigenous population and household characteristics, anticipated future population and household characteristics, and other community characteristics identified in the research.

Table 7: Most Likely Scenario Population Forecasts by Jurisdiction (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MSA	232,900	256,520	276,560	294,160	309,060	321,070	330,550
MPA	222,366	243,525	262,899	280,111	294,429	306,093	315,416
Cass County	168,930	187,740	203,130	216,410	227,540	236,410	243,370
Clay County	63,970	68,780	73,430	77,750	81,520	84,660	87,180
Fargo	117,230	130,590	142,760	153,840	163,360	171,540	178,900
West Fargo	32,300	37,130	39,440	41,020	42,020	42,190	41,720
Horace	2,620	2,770	2,960	3,090	3,180	3,240	3,280
Cassellton	2,420	2,520	2,650	2,770	2,850	2,910	2,970
Balance of Cass	14,360	14,730	15,320	15,690	16,130	16,530	16,500
Moorhead	43,840	45,740	48,850	51,860	54,630	56,990	58,870
Dilworth	4,300	4,740	5,160	5,590	5,910	6,180	6,440
Barnesville	2,780	3,000	3,280	3,490	3,650	3,830	3,990
Hawley	2,190	2,290	2,340	2,450	2,510	2,610	2,630
Balance of Clay	10,860	13,010	13,800	14,360	14,820	15,050	15,250

Table 8: Best Case Scenario Population Forecasts by Jurisdiction (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MSA	232,900	259,260	281,030	300,460	317,400	331,730	342,360
MPA	222,366	246,523	267,331	286,013	302,419	316,413	326,782
Cass County	168,930	189,900	206,620	221,350	233,940	244,460	251,940
Clay County	63,970	69,360	74,410	79,110	83,460	87,270	90,420
Fargo	117,230	129,690	140,030	151,810	162,450	172,140	179,800
West Fargo	32,300	37,370	40,140	42,000	43,240	43,660	43,270
Horace	2,620	5,070	8,190	8,940	9,500	9,820	10,040
Cassellton	2,420	2,530	2,680	2,800	2,920	2,990	3,110
Balance of Cass	14,360	15,240	15,580	15,800	15,830	15,850	15,720
Moorhead	43,840	47,120	50,290	53,340	56,390	59,100	61,420
Dilworth	4,300	4,760	5,210	5,620	5,960	6,270	6,510
Barnesville	2,780	3,020	3,300	3,530	3,730	3,920	4,110
Hawley	2,190	2,290	2,390	2,460	2,570	2,630	2,700
Balance of Clay	10,860	12,170	13,260	14,160	14,810	15,350	15,680

Population change is a result of three factors: deaths, births, and migration. Deaths and births are usually the dominant factors in areas which are not experiencing some kind of major economic change (such as a gold rush or an oil boom). A population pyramid is a graphical tool which provides a clear illustration of age and sex distribution within a particular geography at a given point in time. The pattern of age distribution can provide insights into the future growth of a given geography. Figure 11 through Figure 15 illustrate the age distribution for the MSA in 2015, and for the MSA Most Likely and Best Case scenarios in 2025 and 2045.

Figure 11: MSA Population Distribution by Age Cohort (2015)

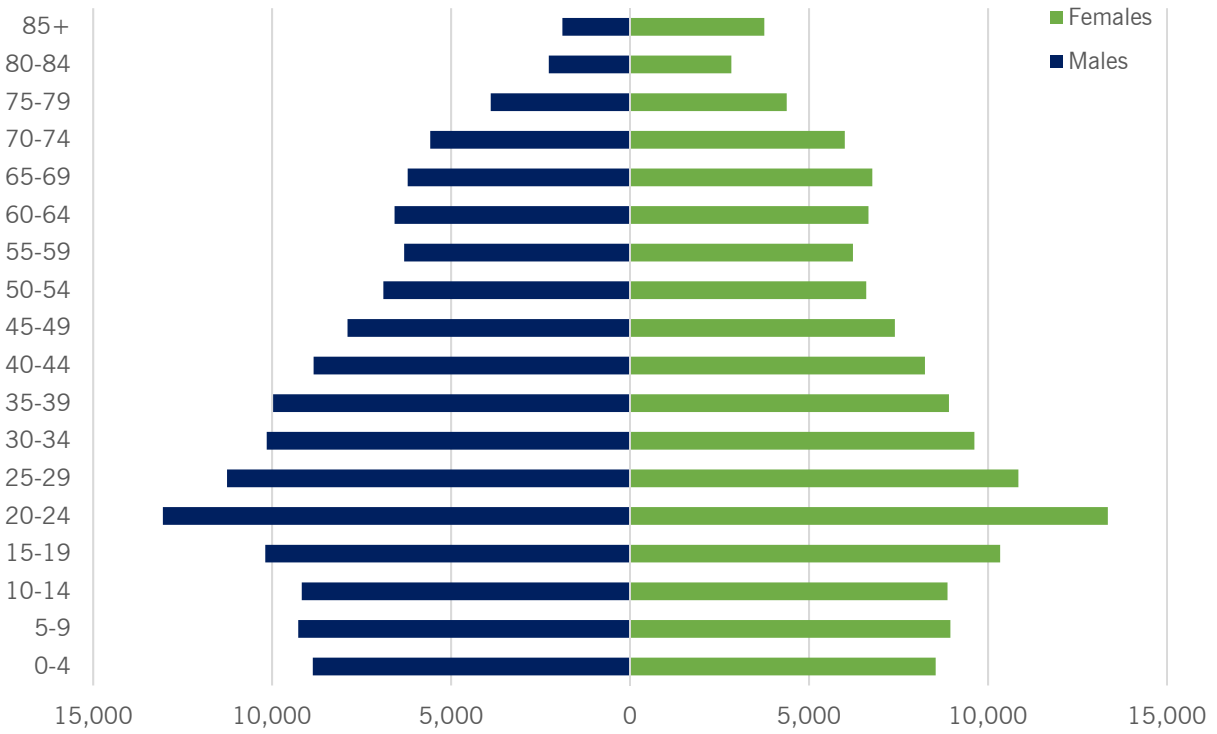


Figure 12: MSA Population Distribution by Age Cohort (2025 Most Likely Scenario)

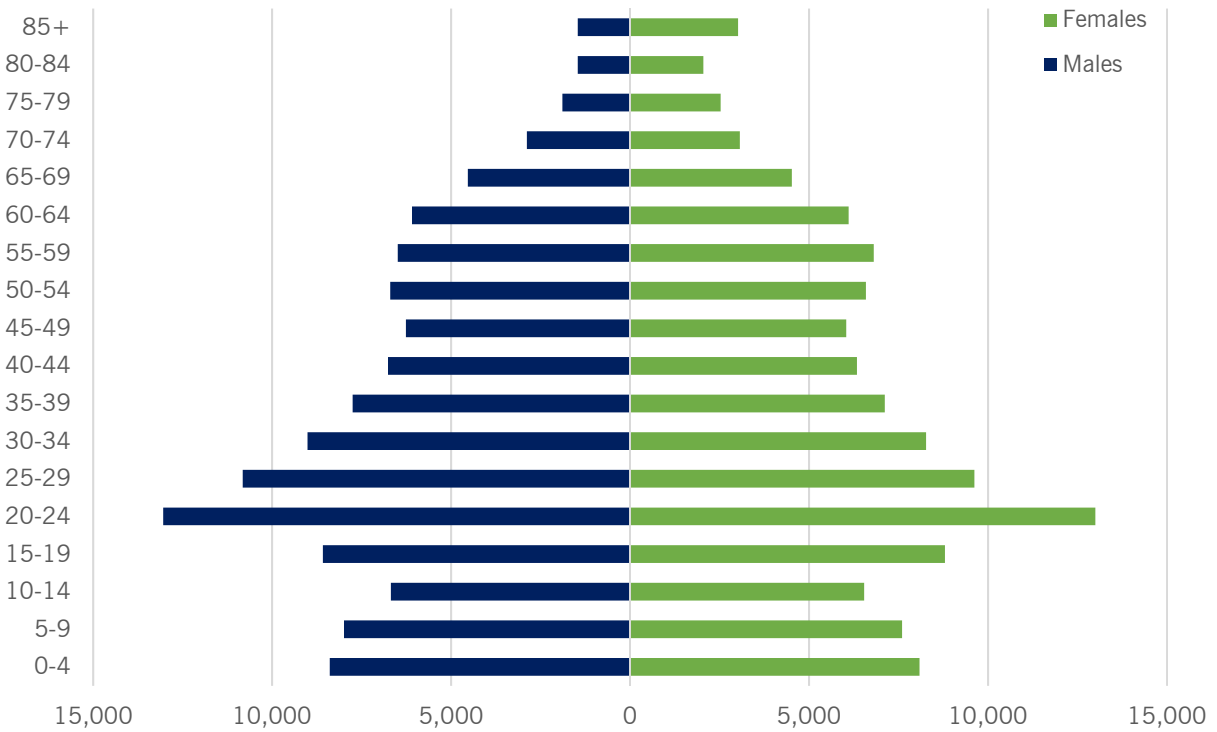


Figure 13: MSA Population Distribution by Age Cohort (2025 Best Case Scenario)

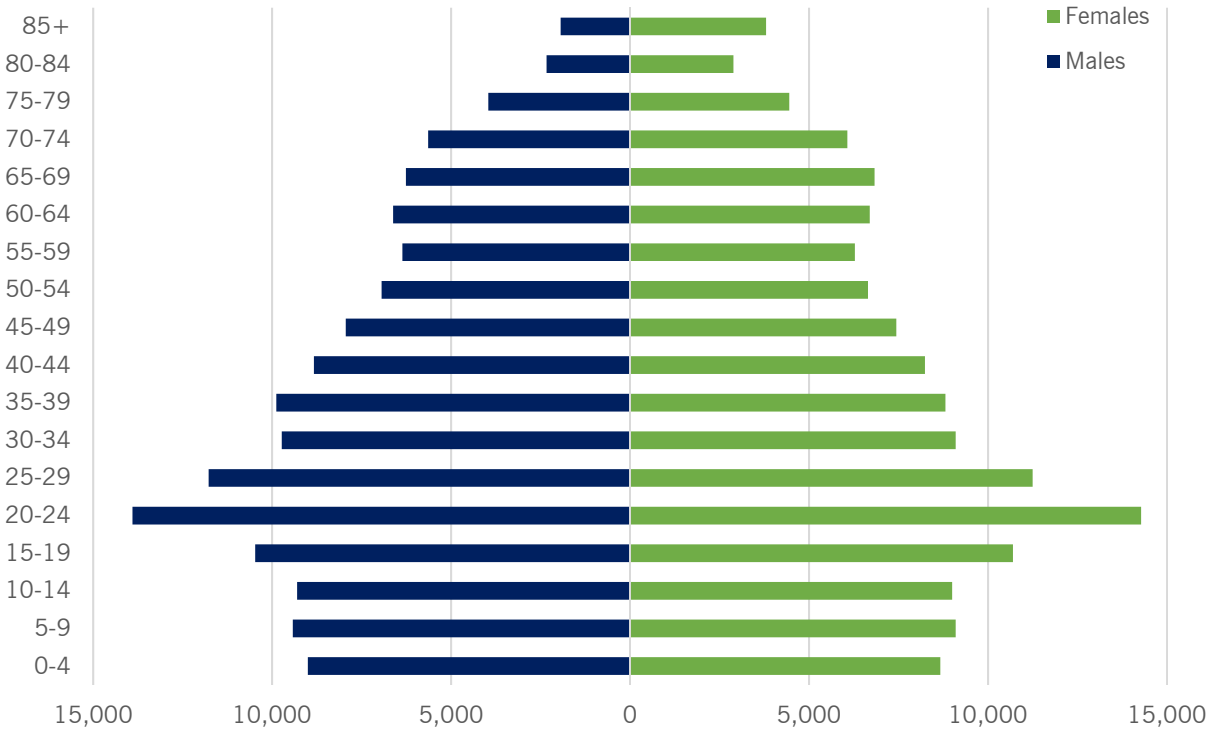


Figure 14: MSA Population Distribution by Age Cohort (2045 Most Likely Scenario)

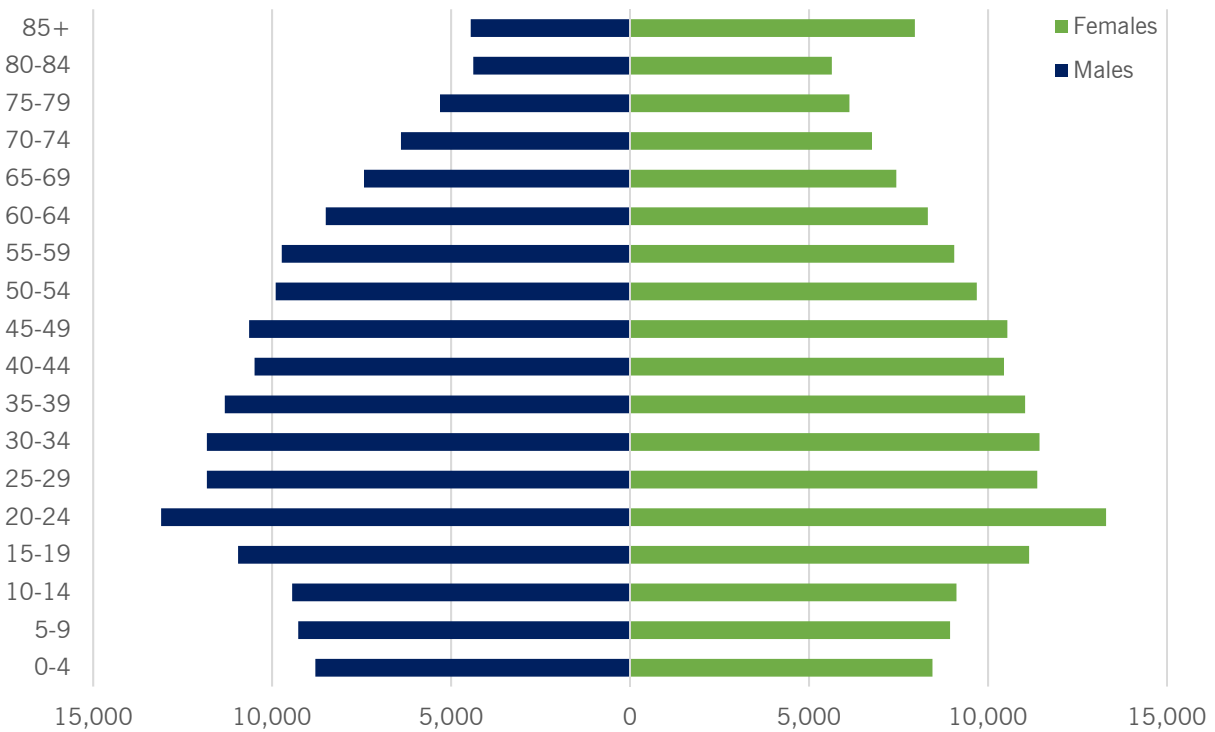
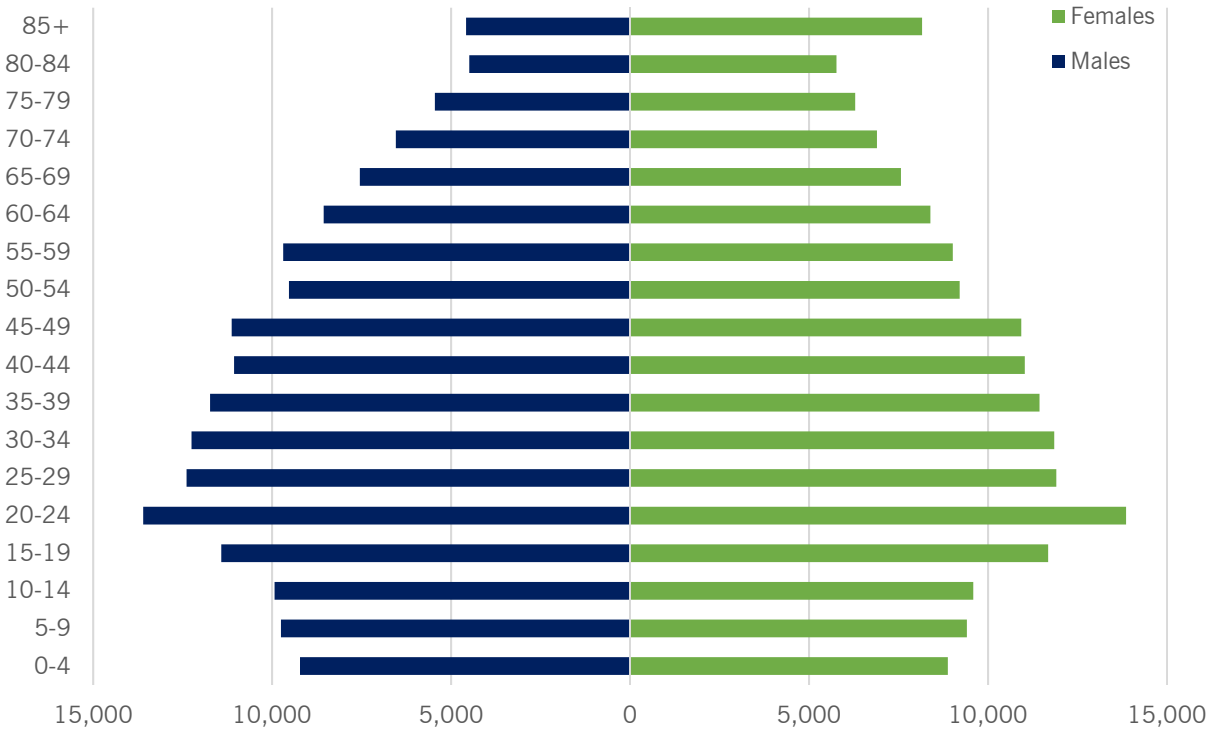


Figure 15: MSA Population Distribution by Age Cohort (2045 Best Case Scenario)



In addition to the Cohort-Component based forecasts, a Structural Model was used to forecast population numbers based on both scenarios for the remaining jurisdictions in the Fargo-Moorhead Metro COG study area (MPA). Summaries of the small area forecasts (areas within the MPA but outside Fargo, West Fargo, Horace, Casselton, Moorhead, Dilworth, Barnesville, and Hawley) are presented in Table 10 and Table 9. Individual small area forecasts are provided in Appendix B.

Table 9: Small Area Most Likely Scenario Population Forecasts (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MPA	222,366	243,525	262,899	280,111	294,429	306,093	315,416
Cass Small Areas	8,803	7,903	8,250	8,438	8,530	8,711	8,662
Clay Small Areas	5,883	5,455	5,810	6,124	6,338	6,436	6,481

Table 10: Small Area Best Case Scenario Population Forecasts (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MPA	222,366	246,523	267,331	286,013	302,419	316,413	326,782
Cass Small Areas	8,803	8,499	8,504	8,534	8,371	8,353	8,253
Clay Small Areas	5,883	6,174	6,597	7,016	7,288	7,530	7,569

HOUSEHOLD FORECASTS

The Most Likely scenario provides an overall household increase for the MSA from the 2015 Demographic Forecast Study estimate number of 94,750 to 129,060 in 2045. This is a 36.2 percent change between 2015 and 2045. The Best Case Scenario provides an overall household increase for the MSA from the 2015 Demographic Forecast Study estimate number of 94,750 to 134,930 in 2045. This is a 42.4 percent change between 2015 and 2045. Figure 16 shows the overall household growth forecasts by scenario from 2010 to 2045. For the purposes of this report, “household” is a group of people living in a dwelling unit while “housing unit” is another term for a dwelling unit.

Figure 16: Overall Household Growth Forecasts by Scenario (2010 to 2045)

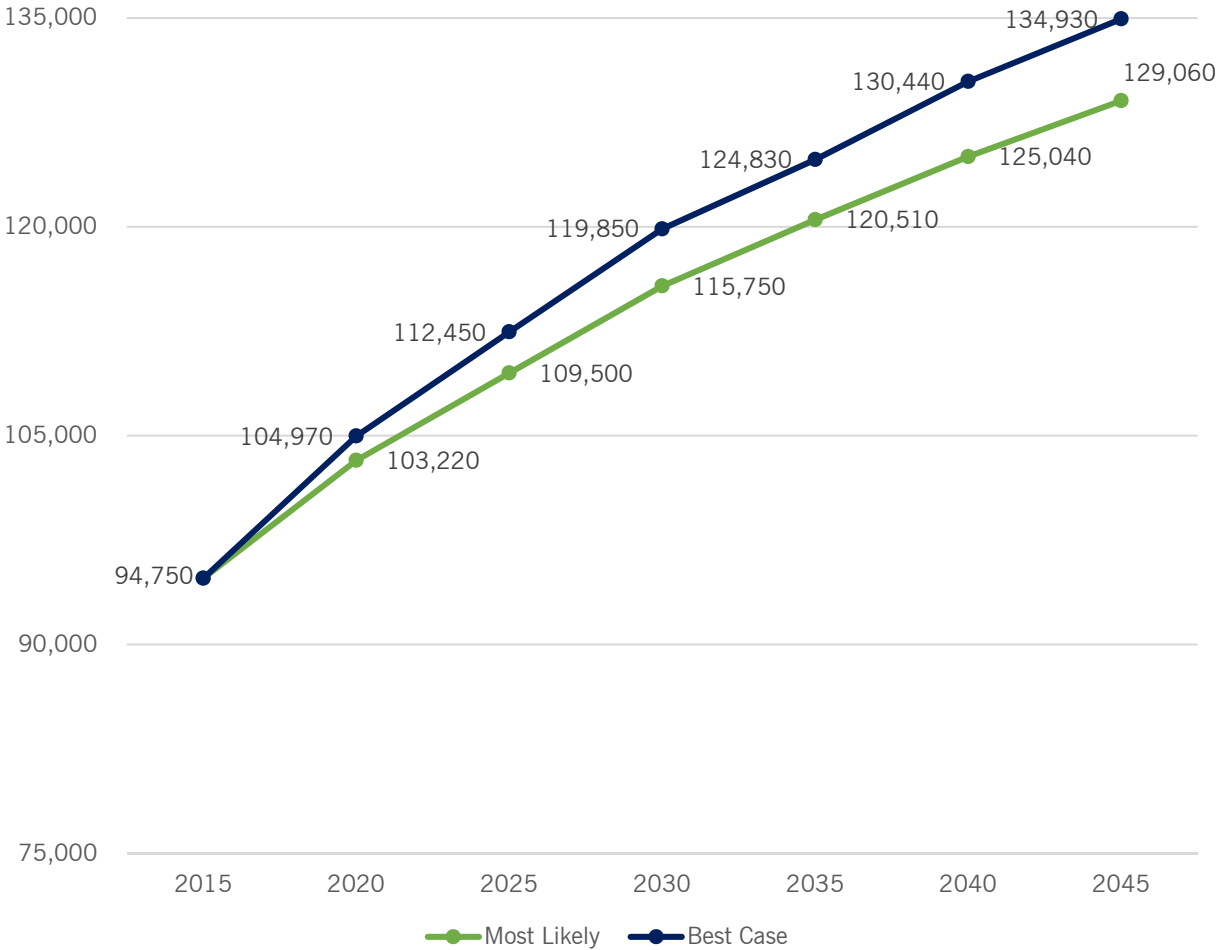


Table 11 summarizes the Most Likely scenario household growth patterns for each jurisdiction for each five-year period of the forecast. Table 12 summarizes the Best Case scenario household growth patterns for each jurisdiction for each five-year period of the forecast.

Table 11: Most Likely Scenario Household Forecasts by Jurisdiction (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MSA	94,750	103,220	109,500	115,750	120,510	125,040	129,060
MPA	90,160	97,920	103,790	109,710	114,080	118,450	122,200
Cass County	70,460	76,950	81,240	85,810	88,880	92,170	95,210
Clay County	24,290	26,270	28,260	29,940	31,630	32,870	33,850
Fargo	50,870	55,890	59,790	63,810	66,270	68,770	71,440
West Fargo	12,410	13,390	13,550	13,780	14,090	14,460	14,680
Horace	840	920	990	1,040	1,060	1,090	1,110
Casselton	890	910	940	980	1,010	1,040	1,060
Balance of Cass	5,450	5,840	5,970	6,200	6,450	6,810	6,920
Moorhead	15,920	17,120	18,560	19,780	20,980	22,030	22,560
Dilworth	1,660	1,990	2,110	2,230	2,390	2,440	2,510
Barnesville	1,050	1,110	1,160	1,230	1,280	1,370	1,520
Hawley	910	930	950	990	1,020	1,050	1,110
Balance of Clay	4,250	5,120	5,480	5,710	5,960	5,980	6,150

Table 12: Best Case Scenario Household Forecasts by Jurisdiction (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MSA	94,750	104,970	112,450	119,850	124,830	130,440	134,930
MPA	90,210	99,550	106,820	113,940	118,700	124,460	128,940
Cass County	70,460	78,160	83,820	89,290	92,520	96,750	99,960
Clay County	24,290	26,810	28,630	30,560	32,310	33,690	34,970
Fargo	50,870	56,280	60,260	64,650	66,630	70,550	73,530
West Fargo	12,410	13,460	13,950	14,630	15,540	15,690	15,840
Horace	840	1,730	2,710	2,980	3,190	3,360	3,520
Casselton	890	920	950	1,000	1,040	1,090	1,150
Balance of Cass	5,450	5,770	5,950	6,030	6,120	6,060	5,920
Moorhead	16,420	17,830	19,190	20,610	21,880	23,010	23,810
Dilworth	1,660	2,030	2,150	2,290	2,470	2,530	2,630
Barnesville	1,050	1,130	1,190	1,270	1,320	1,430	1,570
Hawley	910	940	970	1,020	1,050	1,080	1,140
Balance of Clay	4,250	4,880	5,130	5,370	5,590	5,640	5,820

The detailed projections for the MSA, Cass County, Clay County, Fargo, West Fargo, Horace, Casselton, Moorhead, Dilworth, Barnesville, and Hawley are provided in Appendix B. There are variations in the rate of growth within each geographic area due to a variety of factors including the existing population and household characteristics, anticipated future household composition and household characteristics, and other local dynamics identified in the research.

In addition to the household forecasts for the large areas which were derived from the Cohort-Component based population forecasts, a Structural Model was used to forecast the Most Likely scenario and Best Case scenario household numbers for the remaining jurisdictions in the MPA. Summaries of these small area forecasts are presented in Table 13 and Table 14. Individual small area forecasts are provided in Appendix B.

Table 13: Small Area Most Likely Scenario Household Forecasts (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MPA	81,875	90,160	97,920	103,790	109,710	114,080	118,450
Cass Small Areas	3,000	3,010	3,000	3,080	3,100	3,220	3,220
Clay Small Areas	2,160	2,190	2,270	2,320	2,400	2,490	2,500

Table 14: Small Area Best Case Scenario Household Forecasts (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MPA	81,875	90,210	99,550	106,820	113,940	118,700	124,460
Cass Small Areas	3,000	3,010	3,150	3,160	3,180	3,290	3,290
Clay Small Areas	2,160	2,220	2,300	2,330	2,400	2,430	2,460

School Population Forecast

Additional population forecasts were compiled for student populations (age five to 17) for the MSA and major jurisdictions within. The Most Likely scenario provides an overall school population increase for the MSA from the 2015 Demographic Forecast Study estimate of 31,133 to 39,942 in 2045. This is a 28.3 percent change between 2015 and 2045. The Best Case scenario provides an overall school population increase for the MSA from the 2015 Demographic Forecast Study estimate of 31,133 to 41,961 in 2045. This is a 34.8 percent change between 2015 and 2045. Figure 17 illustrates the overall growth in these two scenarios.

Figure 17: Overall School Population Forecasts by Scenario (2015 to 2045)

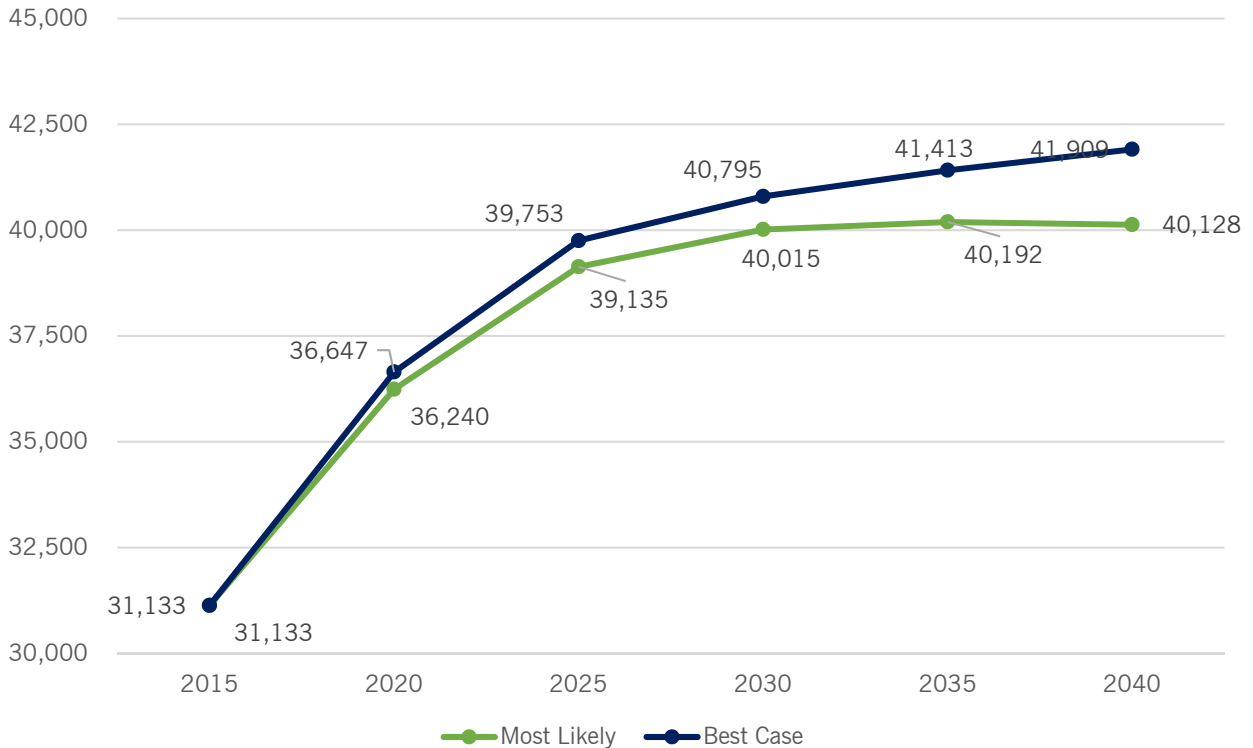


Table 15 summarizes the Most Likely scenario school population patterns for each jurisdiction for each five-year period of the forecast. Table 16 summarizes the Best Case scenario school population patterns for each five-year period of the forecast. In the Most Likely scenario, the school population peaks in 2035. In the Best Case scenario the population growth is nearly flat by 2040.

Table 15: Most Likely Scenario School Population Forecasts by Jurisdiction (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MSA	31,133	36,240	39,135	40,015	40,192	40,128	39,942
Cass County	22,348	26,843	29,474	30,150	30,143	29,908	29,669
Clay County	8,785	9,397	9,661	9,865	10,049	10,220	10,273
Fargo	14,163	17,156	19,760	21,369	22,416	22,891	22,931
Moorhead	5,580	6,097	6,213	6,417	6,685	6,943	7,049
West Fargo	5,203	6,656	6,733	5,851	4,814	4,277	4,031
Dilworth	777	817	926	1,030	1,012	915	846
Horace	522	531	527	577	572	527	490
Cassellton	459	509	464	427	398	408	408
Barnesville	522	596	604	628	620	602	588
Hawley	410	430	387	374	350	348	345

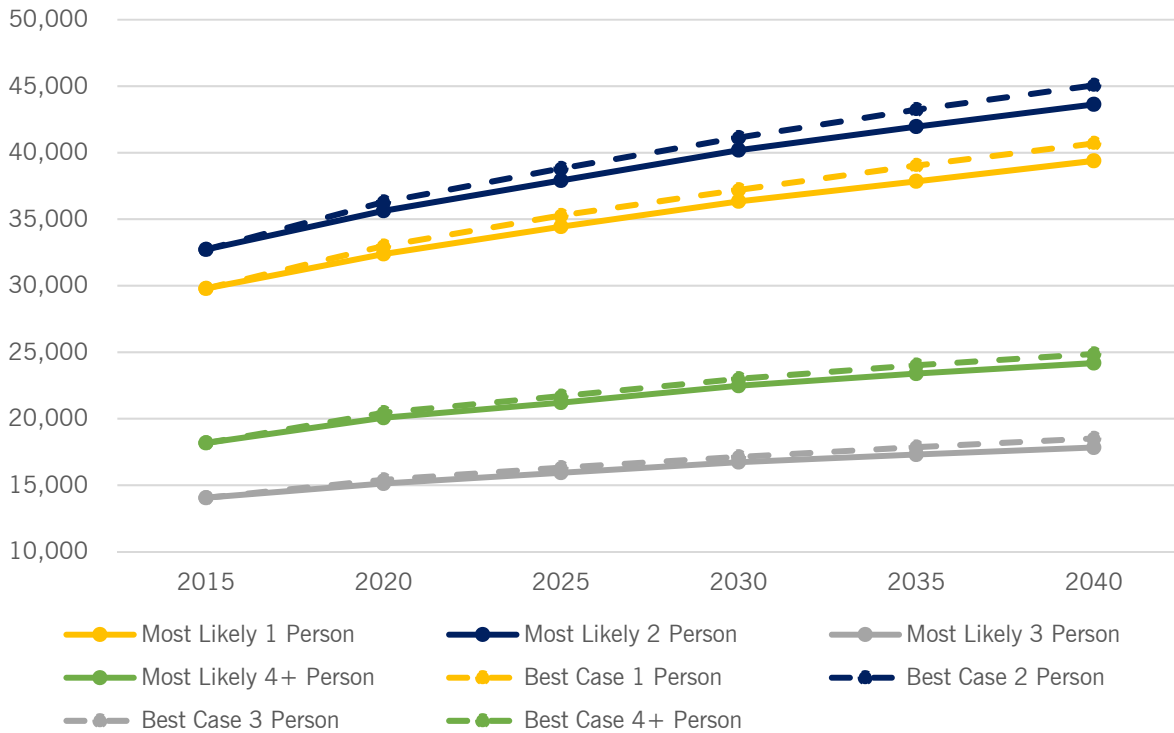
Table 16: Best Case Scenario School Population Forecasts by Jurisdiction (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MSA	31,133	36,647	39,753	40,795	41,413	41,909	41,961
Cass County	22,348	27,158	29,970	30,827	31,200	31,328	31,058
Clay County	8,785	9,489	9,783	9,968	10,213	10,581	10,903
Fargo	14,163	17,486	19,999	21,487	22,927	23,478	23,606
Moorhead	5,580	6,158	6,210	6,288	6,517	6,935	7,265
West Fargo	5,203	6,752	6,939	6,152	5,142	4,600	4,332
Dilworth	777	824	934	1,040	1,002	905	851
Horace	522	529	552	622	647	639	592
Cassellton	459	505	481	457	440	438	448
Barnesville	522	596	604	638	652	632	632
Hawley	410	430	407	384	372	348	343

HOUSEHOLD SIZE FORECAST

In addition to the preparation of population, household and job forecasts for the metropolitan cities and the remaining areas of Cass and Clay counties, household size forecasts were developed to further stratify trip generation data within the travel demand model. Figure 18 shows the overall distribution of household size (1 person household, 2 person household, three person household and four or more person household) by scenario from 2015 to 2045.

Figure 18: Overall Distribution of Household Size by Scenario (2015 to 2045)



The household size characteristic was forecasted for the MSA, Cass County, Clay County, Fargo, West Fargo, Horace, Casselton, Moorhead, Dilworth, Barnesville and Hawley and distributed into one-person, two-person, three-person, and four-or-more-person households. Table 17 illustrates the distribution for the Most Likely scenario; Table 18 illustrates the distribution for the Best Case scenario. Two-person households are the most prevalent in the MSA and are expected to be through 2045. The least prevalent households are three-person households, and are expected to be through 2045.

Table 17: Most Likely Scenario Percentage of Households by Size for the MSA (2015 to 2045)

Household Size	2015	2020	2025	2030	2035	2040	2045
ML-1	31.4%	31.4%	31.5%	31.4%	31.4%	31.5%	31.7%
ML-2	34.5%	34.5%	34.6%	34.7%	34.8%	34.9%	35.1%
ML-3	14.8%	14.7%	14.6%	14.5%	14.4%	14.3%	14.1%
ML-4+	19.2%	19.4%	19.4%	19.4%	19.4%	19.3%	19.1%

Table 18: Best Case Scenario Percentage of Households by Size for the MSA (2015 to 2045)

Household Size	2015	2020	2025	2030	2035	2040	2045
BC-1	31.4%	31.4%	31.5%	31.4%	31.4%	31.5%	31.7%
BC-2	34.5%	34.5%	34.6%	34.7%	34.8%	34.9%	35.1%
BC-3	14.8%	14.7%	14.6%	14.5%	14.4%	14.3%	14.4%
BC-4+	19.2%	19.5%	19.4%	19.4%	19.3%	19.3%	18.8%

JOBS FORECAST

The Most Likely scenario provides an overall jobs increase for the MSA from the 2015 Demographic Forecast Study estimate of 151,290 to 203,790 in 2045. This is a 34.7 percent change between 2015 and 2045. The Best Case scenario provides an overall jobs increase for the MSA from the 2015 Demographic Forecast Study estimate of 151,290 to 209,363 in 2045. This is a 38.4 percent change between 2015 and 2045. Figure 19 illustrates the overall growth in these two scenarios.

Figure 19: Overall Jobs Growth Forecasts by Scenario (2015 to 2045)



Table 19 summarizes the Most Likely scenario jobs growth patterns for each jurisdiction for each five-year period of the forecast. Table 20 summarizes the Best Case scenario jobs growth patterns for each jurisdiction for each five-year period of the forecast. Jobs are reported for the MPA, not the MSA, so the Balance of Cass and Balance of Clay numbers are only for the parts of Cass and Clay counties within the MPA and outside of the other communities included in the tables (Fargo, Moorhead, etc.).

Table 19: Most Likely Scenario Jobs Forecasts by Jurisdiction (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MPA	147,508	156,315	163,956	173,175	184,181	192,997	198,695
Cass County (MPA)	124,792	132,242	138,707	146,506	155,817	163,275	168,096
Clay County (MPA)	22,716	24,072	25,249	26,669	28,364	29,721	30,599
Fargo	107,253	113,656	119,213	125,915	133,918	140,328	144,471
West Fargo	13,623	14,436	15,142	15,993	17,010	17,824	18,350
Horace	331	351	368	389	414	433	446
Casselton	1,086	1,151	1,207	1,275	1,356	1,421	1,463
Balance of Cass (MPA)	1,441	1,527	1,602	1,692	1,800	1,886	1,941
Moorhead	17,767	18,828	19,748	20,859	22,184	23,246	23,933
Dilworth	1,170	1,240	1,300	1,373	1,461	1,530	1,576
Barnesville	895	948	994	1,050	1,117	1,171	1,205
Hawley	1,149	1,218	1,277	1,349	1,435	1,503	1,548
Balance of Clay (MPA)	1,002	1,062	1,113	1,176	1,251	1,311	1,349

Table 20: Best Case Scenario Jobs by Jurisdiction (2015 to 2045)

	2015	2020	2025	2030	2035	2040	2045
MPA	147,508	157,054	166,032	176,133	187,938	197,557	204,128
Cass County (MPA)	124,792	132,868	140,463	149,008	158,995	167,133	172,693
Clay County (MPA)	22,716	24,186	25,569	27,124	28,942	30,424	31,436
Fargo	107,253	114,193	120,722	128,066	136,649	143,644	148,421
West Fargo	13,623	14,504	15,333	16,266	17,357	18,245	18,852
Horace	331	353	373	396	422	444	458
Casselton	1,086	1,156	1,222	1,296	1,383	1,454	1,503
Balance of Cass (MPA)	1,441	1,534	1,622	1,721	1,836	1,930	1,994
Moorhead	17,767	18,917	19,998	21,215	22,637	23,796	24,587
Dilworth	1,170	1,245	1,317	1,397	1,490	1,567	1,619
Barnesville	895	953	1,007	1,068	1,140	1,198	1,238
Hawley	1,149	1,223	1,293	1,372	1,464	1,539	1,590
Balance of Clay (MPA)	1,002	1,067	1,128	1,196	1,276	1,342	1,386

Table 21 and Table 22 show the relationship between forecasted jobs and population as a ratio. A ratio closer to one suggests a high concentration of jobs and a ratio closer to one suggests primarily residential communities. The benchmark data are the Demographic Study estimates of jobs and population by jurisdiction in 2015. This ratio provides an understanding of the anticipated proportion of jobs to people in each jurisdiction, as well as how that proportion is anticipated to change over time. What is most obvious is the proportion of jobs in the MPA are much greater on the Cass County side than the proportion of jobs on the Clay County side.

Table 21: Most Likely Scenario Jobs per Capita for 2015, 2025, and 2045

	2015	2025	2045
MPA	0.66	0.62	0.63
Cass County (MPA)	0.74	0.68	0.69
Clay County (MPA)	0.36	0.34	0.35
Fargo	0.91	0.84	0.81
West Fargo	0.42	0.38	0.44
Horace	0.13	0.12	0.14
Casselton	0.45	0.46	0.49
Balance of Cass (MPA)	0.10	0.10	0.12
Moorhead	0.42	0.40	0.41
Dilworth	0.27	0.25	0.24
Barnesville	0.32	0.30	0.30
Hawley	0.52	0.55	0.59
Balance of Clay (MPA)	0.08	0.08	0.09

Table 22: Best Case Scenario Jobs per Capita for 2015, 2025, and 2045

	2015	2025	2045
MPA	0.66	0.62	0.62
Cass County (MPA)	0.74	0.68	0.69
Clay County (MPA)	0.36	0.34	0.35
Fargo	0.91	0.86	0.83
West Fargo	0.42	0.38	0.44
Horace	0.13	0.05	0.05
Casselton	0.45	0.46	0.48
Balance of Cass (MPA)	0.10	0.10	0.13
Moorhead	0.41	0.40	0.40
Dilworth	0.27	0.25	0.25
Barnesville	0.32	0.31	0.30
Hawley	0.52	0.54	0.59
Balance of Clay (MPA)	0.09	0.08	0.08