

Monitoring Report

Chapter 1

PEOPLE

Updated March 2016



The Bismarck-Mandan Monitoring Report is considered a “living” document. Timely updates of each chapter are made as data becomes available. Each chapter of the Monitoring Report lists the month and year of its last revision.

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1

PEOPLE

The amount, concentration, and character of population have an influence on travel behavior. This chapter examines a variety of existing characteristics, recent trends and population projections.

EXISTING CHARACTERISTICS

The US Census Bureau conducts an official count of the US population once every 10 years. The last official US Census count was conducted in 2010. Additionally, the US Census Bureau produces estimates of population during non-census years. Estimates are based on projections from the Decennial Census and modified by birth, death, and migration records, however are not 100% count efforts, and contain a greater margin of error.

As previously indicated the MPO is comprised of the jurisdictions of Bismarck, Lincoln, Mandan,

Figure 1.1: MPO and M.S.A. Population, 2010

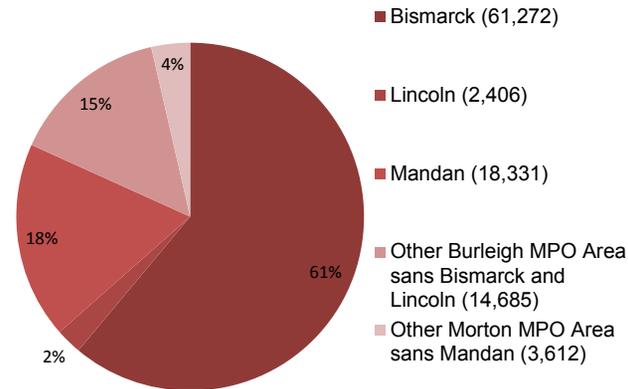
Jurisdiction	2010 Population	% of Bismarck, ND MSA Population
Bismarck	61,272	56.33%
Lincoln	2,406	2.21%
Mandan	18,331	16.85%
Bismarck-Mandan MPO	100,306	92.21%
Burleigh Total	81,308	74.75%
Morton Total	27,471	25.25%
Bismarck, ND MSA Total	108,779	100.00%

Based on the 2010 US Census Bureau Decennial Census

and urbanized portions of Burleigh and Morton Counties. The MPO is located within the Bismarck, ND Metropolitan Statistical Area (MSA), which as of 2010 included all of Burleigh and Morton Counties. **Figure 1.1** represents the 2010 population by jurisdiction within the region. Population within the MPO accounted for approximately 92% of the total population in Burleigh and Morton County in 2010.

Figure 1.2 provides a more detailed percentage breakdown of the jurisdictional populations which make up the MPO. Bismarck comprises the largest percentage of population at approximately 61%.

Figure 1.2: MPO Population by Jurisdiction, 2010

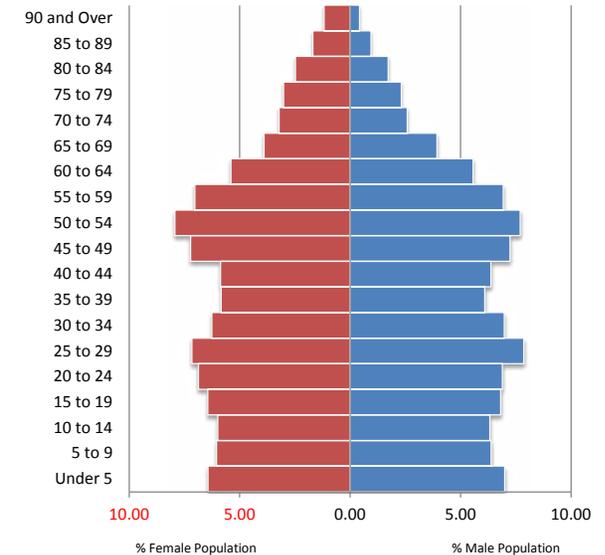


Based on the 2010 US Census Bureau Decennial Census

The following **Figure 1.3** represents the age structure in 2010 for the Bismarck, ND MSA through a “population pyramid”. The Bismarck, ND MSA population pyramid is representative of an area with low infant mortality, slow natural population increase (only considering births and deaths), and long life expectancies. This age structure would be consistent with that of the United States as a whole. The median age of the Bismarck, ND MSA and various jurisdictions in comparison to North Dakota and the United States is represented in **Figure 1.4**. The median age of the Bismarck, ND MSA is slightly higher than the median ages of North Dakota and the

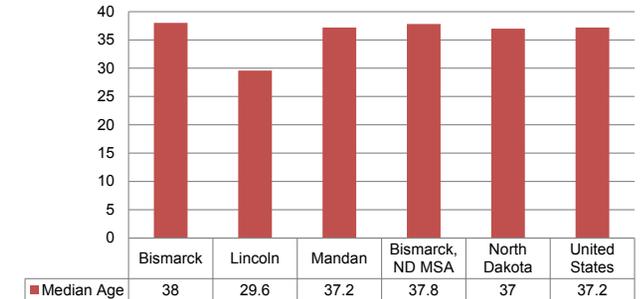
United States as a whole. The jurisdiction with the youngest median age in the Bismarck MPO area was Lincoln at 29.6 and the oldest in Bismarck at 38. **Map 1.1** depicts concentrations of “Elderly” persons in the MPO area. For this effort, “Elderly” is considered 60 years of age or older.

Figure 1.3: Population Pyramid - M.S.A 2010



Based on the 2010 US Census Bureau Decennial Census

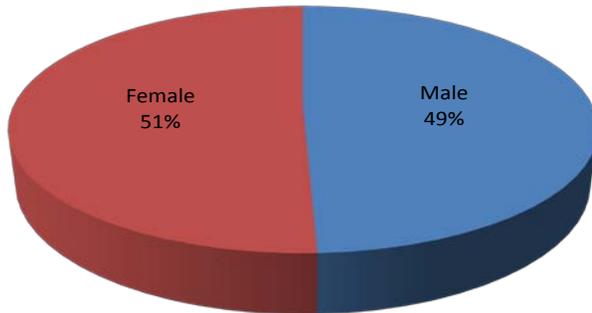
Figure 1.4: Median Age of MPO Jurisdictions in Comparison to North Dakota and the United States, 2010



Based on the 2010 US Census Bureau Decennial Census

In 2010, the Bismarck, ND MSA was comprised of a slightly higher percentage of females compared to males, as represented in **Figure 2.5**.

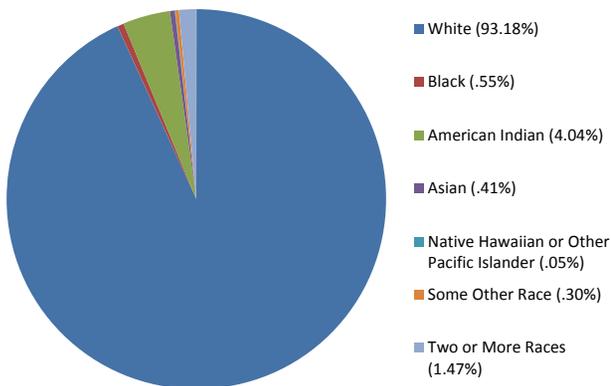
Figure 1.5: Gender - Bismarck, ND MSA 2010



Based on the 2010 US Census Bureau Decennial Census

Figure 1.6 represents the racial composition of the Bismarck, ND MSA. In 2010, approximately 93% of the Bismarck, ND MSA population was comprised of White individuals. The largest minority racial category was American Indian at 4.04%. **Map 1.2** depicts concentrations of minority populations within the Bismarck-Mandan MPO area.

Figure 1.6: Racial Composition of the Bismarck-Mandan, ND MSA, 2010



Based on the 2010 US Census Bureau Decennial Census

Figure 1.7 represents percent of population in poverty (as defined by the US Census Bureau) of various Bismarck-Mandan MPO jurisdictions in comparison to North Dakota and the United States. Based on the 2009-2013 US Census, Bismarck-Mandan MPO had lower rates of poverty in comparison to North Dakota and the United States. However this data may not be representative of current trends. This data is based on a sample of the population between 2009 and 2013. **Map 1.3** depicts concentrations of households in poverty in the Bismarck-Mandan MPO area.

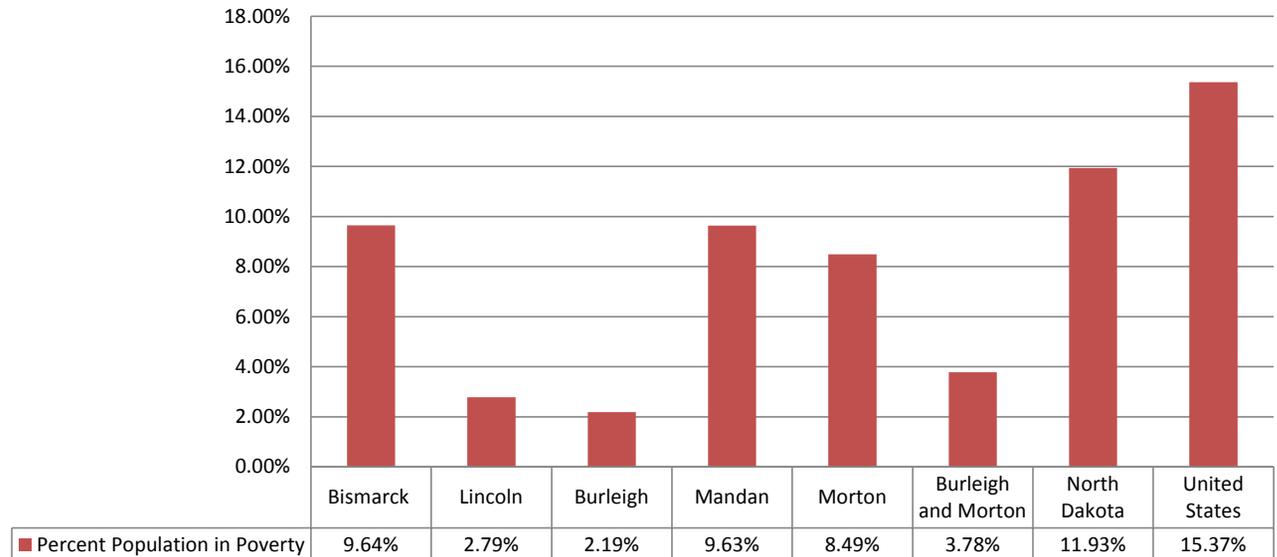
The following **Figure 1.8** represents population densities of various Bismarck-Mandan MPO jurisdictions in relation to North Dakota and the United States. **Map 1.4** represents population density within the Bismarck-Mandan MPO area.

Figure 1.8: Population Density of MPO Jurisdictions, North Dakota and the United States (2010)

	Population	Land Area (Square Miles)	Population Density by Land Area (persons/sq. mile)
Bismarck	61,272	30.84	1,986.77
Lincoln	2,406	1.12	2,148.21
Burleigh County	81,308	1,632.65	49.80
Mandan	18,366	11.03	1,665.10
Morton County	27,471	1,926.27	14.26
Bismarck, ND MSA	108,779	3,559	30.57
North Dakota	672,591	69,000.80	9.75
United States	308,745,712	3,531,905.43	87.42

Based on the 2010 US Census Bureau Decennial Census

Figure 1.7: Percent of Population Below the Poverty Level Comparing Bismarck-Mandan MPO Jurisdictions to North Dakota and the United States. 2012



Based on the 2009-2013 (5yr) US Census Bureau American Community Survey Table B17001

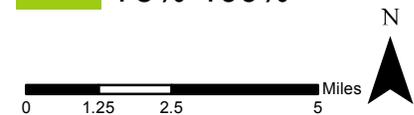


Map 1.1: Concentration of "Elderly" Persons in the MPO Area by Census Block

-  MPO Boundary
-  Corporate Limits

Percent "Elderly"

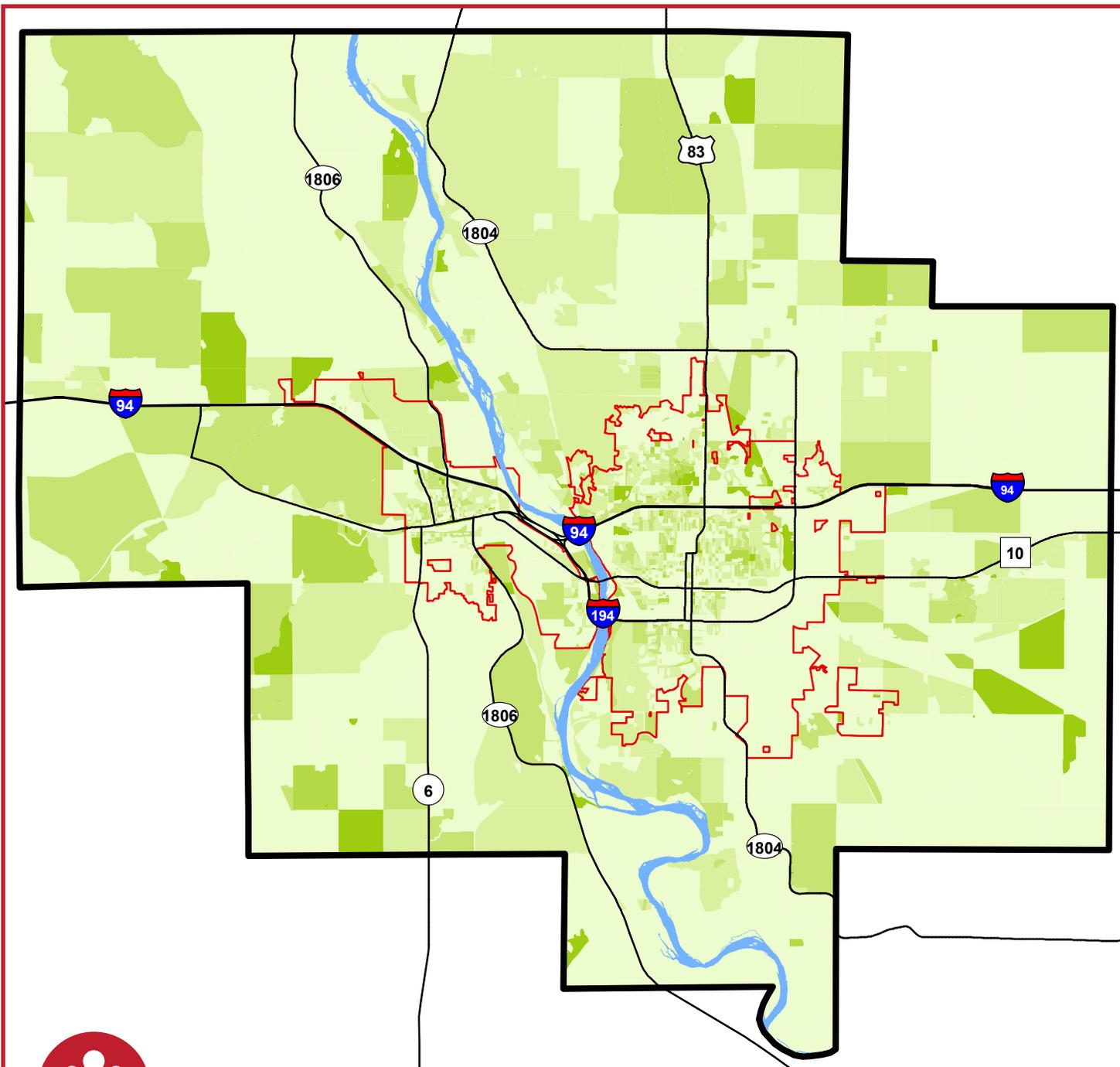
-  14% or Less
-  15% - 24%
-  25% - 49%
-  50 - 74%
-  75%-100%



Map created by DAN, May 2015. Updated November 2015 by WRH. Based on data maintained by the Bismarck-Mandan MPO, the City of Bismarck, Morton County, and the US Census Bureau. This map is for representation use only and does not represent a survey. No liability is assumed as to the accuracy of the data delineated herein.

*For purposes of this effort "Elderly" is considered 60 years of age or older. Data based on table P12 of the 2010 US Census Summary File 1.

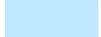
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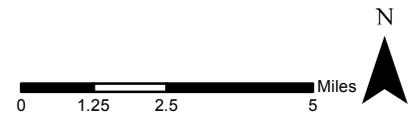


Map 1.2: Percent Minority Population in the MPO Area (2010)

-  MPO Boundary
-  Corporate Limits

Minority Population (By Census Block)

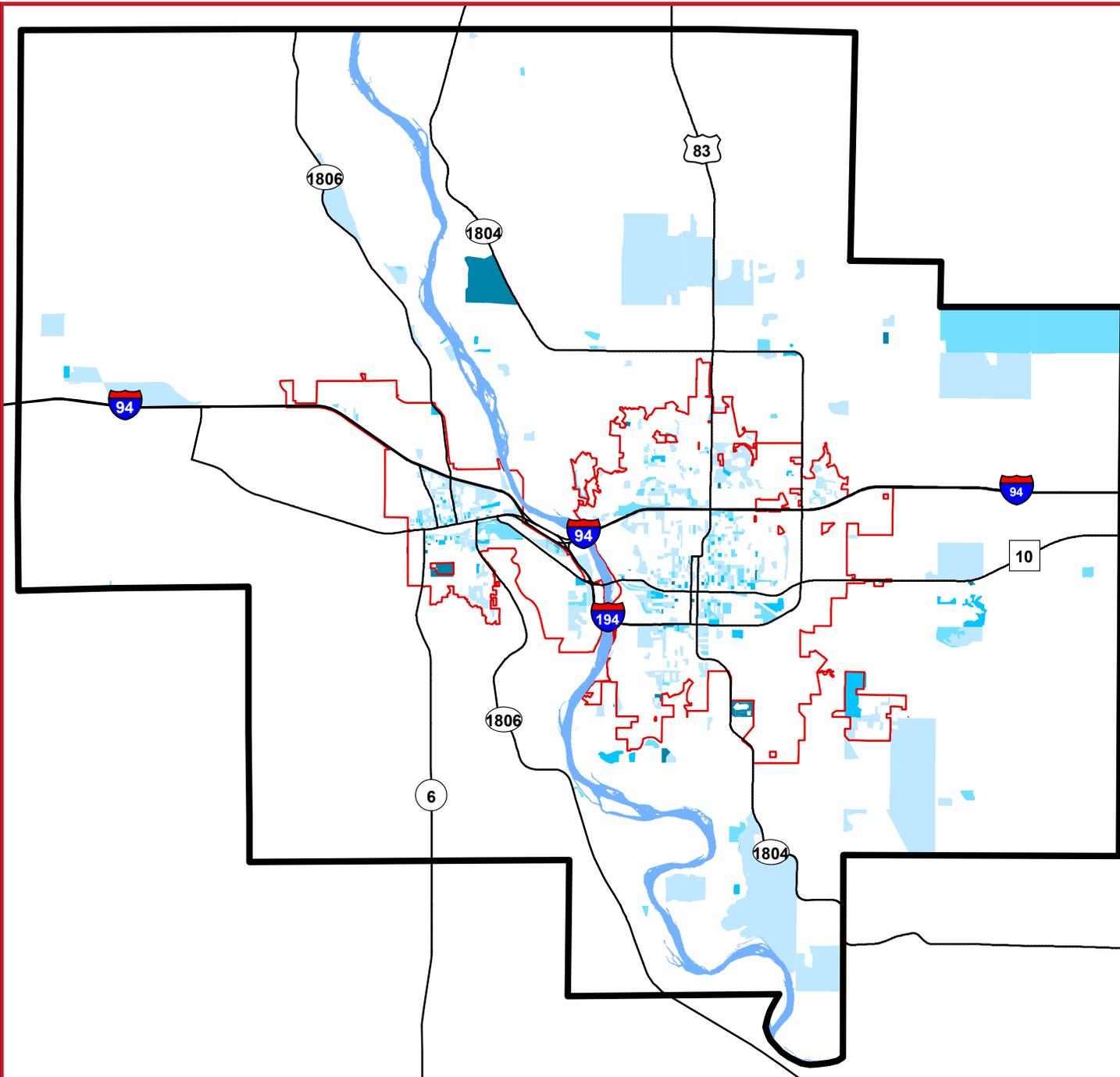
-  4% or Less
-  5% to 14%
-  15% to 24%
-  25% to 49%
-  More than 50%



Map created by DAN May 2015. Updated November 2015 by WRH. Based on data maintained by the City of Bismarck and Bismarck-Mandan MPO. This data is for representation only and does not represent a survey. No Liability is assumed as to the accuracy of the data delineated herein.

Based on US Census Bureau 2010 Block Data. For this effort "Minority Population" is considered to be all races other than the US Census Bureau defined "White" Category

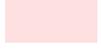
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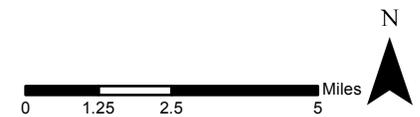


Map 1.3: Percent of Households in Poverty in the MPO Area (2009 - 2013)

-  MPO Boundary
-  Corporate Limits

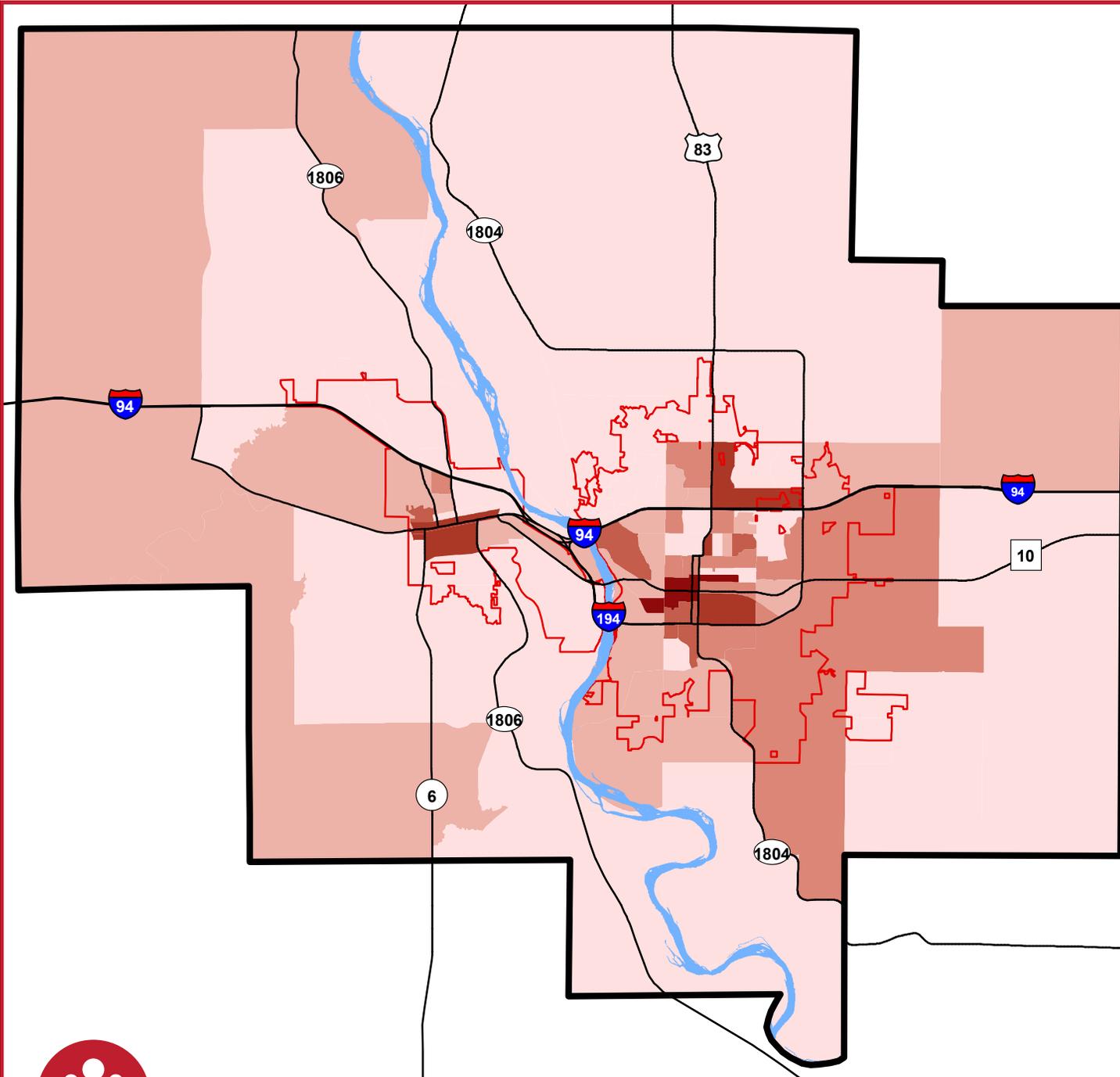
Households in Poverty (By Census Block Group)

-  0% - 4%
-  5% - 9%
-  10% - 14%
-  15% - 19%
-  20% - 24%
-  More than 25%

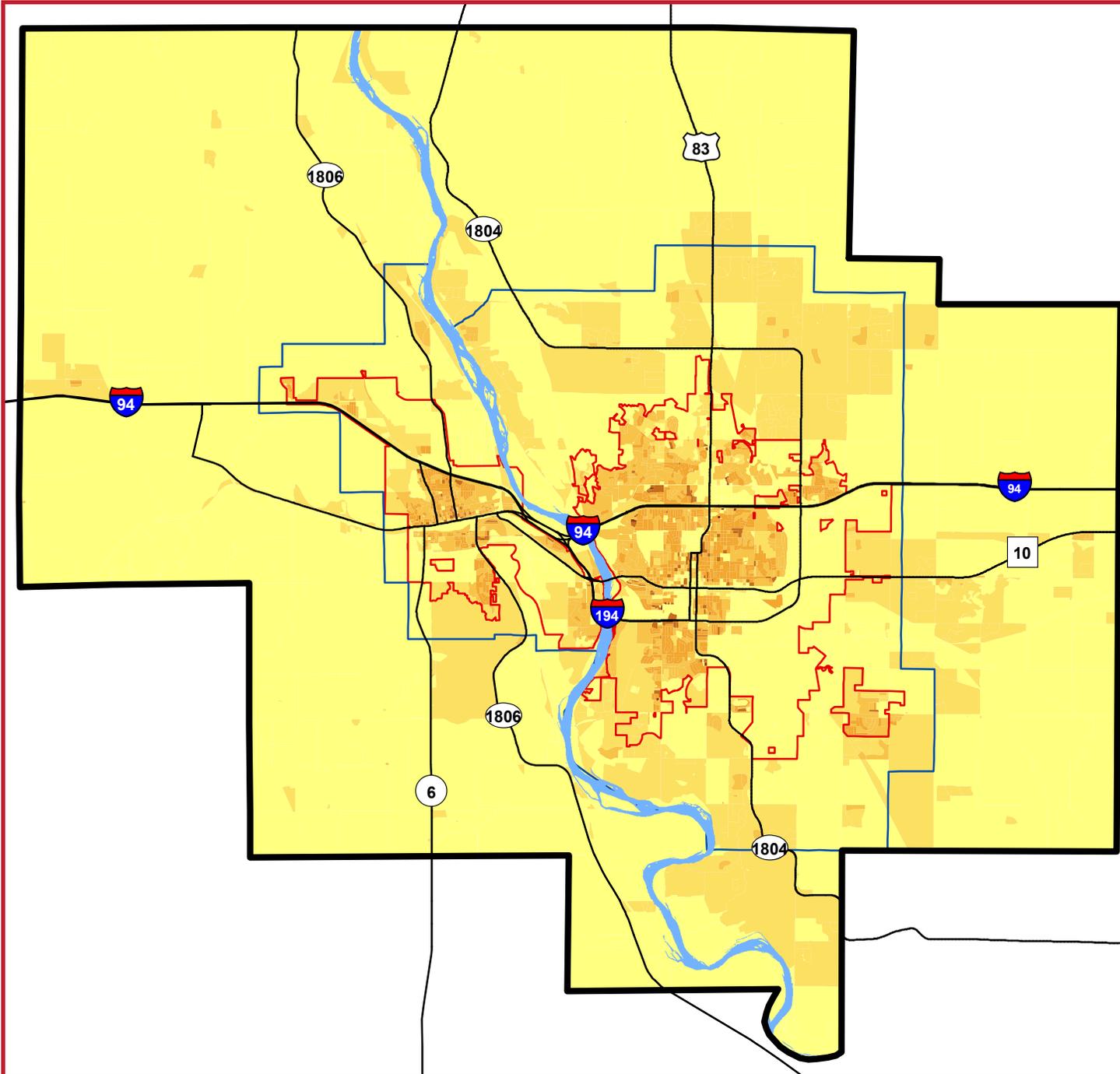


Map created November 2015 by W.R.H. Based on data from the US Census Bureau 2009-2013 American Community Survey Geodatabase Format, as well as, the City of Bismarck and MPO. Percent population obtained by considering US Census Bureau Tables B17017e1 and B17017e2.

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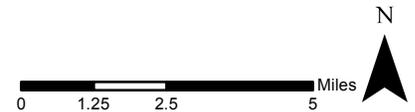
Map 1.4: Population Density of the MPO Area (2010)



-  MPO Boundary
-  Corporate Limits

Persons Per Square Mile (by US Census Block)

-  0 - 50
-  51 - 1,000
-  1,001 - 5,000
-  5,001 - 10,000
-  10,001 - 25,000
-  25,0001- 50,000
-  50,001 - 100,000



Map created November 2015 by W.R.H.
Based on data from the US Census Bureau
2010 Decennial Census Block information, as
well as, the City of Bismarck and the MPO.

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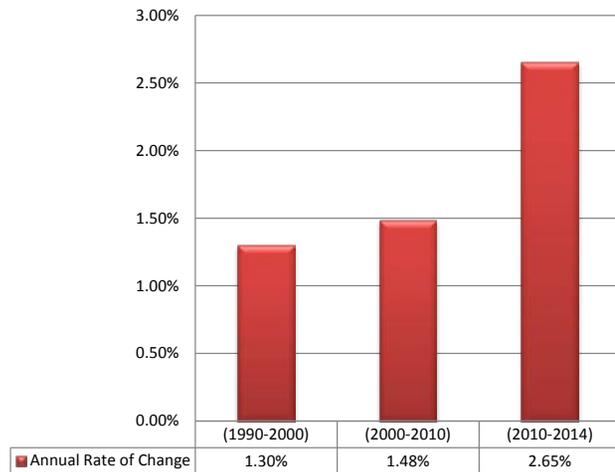


RECENT TRENDS

Historically the Bismarck-Mandan area has seen annual growth rates between 1% to 1.5%. Recent US Census Bureau population estimates for Burleigh and Morton County indicate a significantly heightened level of growth compared to previous decades. The latest available US Census Bureau estimates as of July 1, 2013 indicate a population of 120,325 individuals in Burleigh and Morton County.

Figure 1.9 indicates the simple annual rate of change by time period for Burleigh and Morton County. The simple annual rate of change was significantly heightened between 2010 and 2014 compared to the previous decades. This estimate may also be conservative as some of the data the US Census Bureau utilizes for establishing population estimates on an annual basis may be as much as three years old.

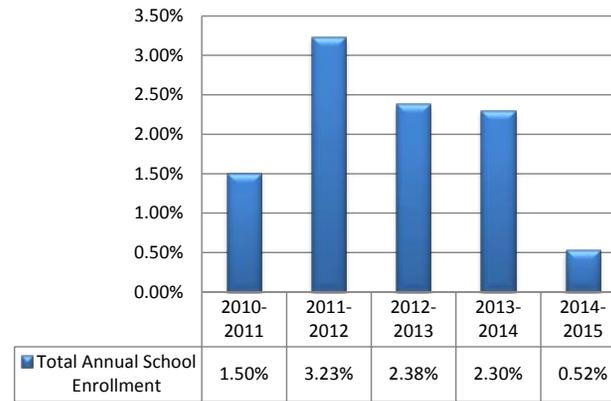
Figure 1.9: Simple Annual Rate of Population Change in Burleigh and Morton County, 1990-2014



Based on the 2010 US Census Bureau Decennial Census

Annually the Bismarck-Mandan MPO collects school enrollment information for all public schools in the Bismarck-Mandan MPO area. The school enrollment figures have been collected from the North Dakota Department of Public Instruction. The following **Figure 1.10** identifies the annual rate of change, in student enrollment, for all public schools in the Bismarck-Mandan MPO area combined from 2010-2015. The simple annual rate of change from 2010-2015 is 2.06%.

Figure 1.10: Annual Rate of Change for all MPO Area Public Schools Combined (2010-2015)



Based on school enrollment data obtained from the North Dakota Department of Public Instruction (2010-2015)

PROJECTIONS

In the development of household and employment projections for the Bismarck-Mandan MPO, Woods & Poole Economics data was acquired in 2012. This information provided population and employment projections to the year 2040. The following **Figure 1.11** represents the US Census Bureau 2010 population as well as Woods & Poole population projections for 2025 and 2040 for Burleigh and Morton Counties.

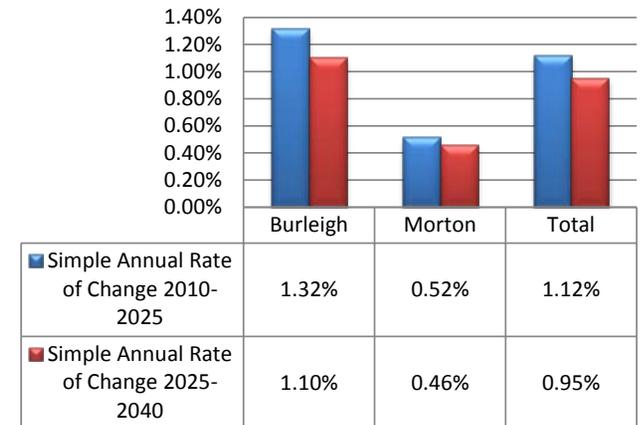
Figure 1.11: Woods & Poole Population Projections for Burleigh and Morton Counties, 2025 and 2040

	2010	2025	2040
Burleigh	81,308	97,410	113,500
Morton	27,471	29,597	31,633
Total	108,779	127,007	145,133

Based on 2010 US Census Bureau and the Woods and Poole 2012 Data Pamphlet and associated Excel Spreadsheets "BUECO.xlsx" and "MOECO.xlsx"

Figure 1.12 identifies the simple annual rate of change for Burleigh and Morton Counties from 2010-2040.

Figure 1.12: Woods & Poole - Bismarck, ND MSA Population Projections: Rate of Change, 2025 and 2040



Based on 2010 US Census Bureau and the Woods and Poole 2012 Data Pamphlet and associated Excel Spreadsheets "BUECO.xlsx" and "MOECO.xlsx"

Annually, the City of Bismarck develops population projections for the region to the year 2040, based on annual US Census Bureau population estimates. **Figure 1.13** and **1.14** identifies the projected population and simple annual rate of increase for Burleigh and Morton Counties in 2020 and 2040.

Figure 1.13: City of Bismarck - Bismarck ND Metropolitan Statistical Area Population Projections, 2020 and 2040

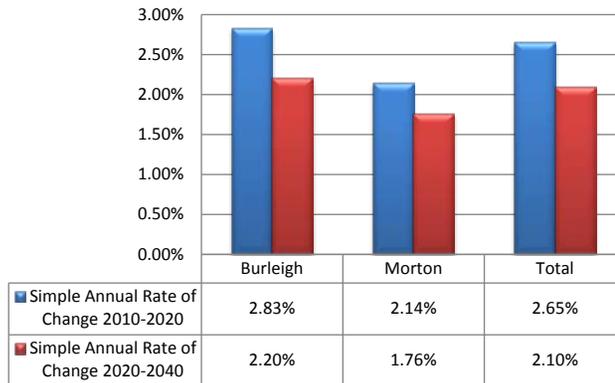
	2010	2020	2040
Burleigh	81,308	104,297	150,277
Morton	27,471	33,350	45,110
Total	108,779	137,647	195,387

Based on 2010 US Census Bureau and the City of Bismarck May 2015, "2010-2040 Metropolitan Population Projections"

the City of Bismarck projections used. Additionally, projection methodologies are likely different between the two sets of population projections referenced. It is undetermined what variables are used in the Woods and Poole projections. The City of Bismarck typically uses a linear regression projection methodology considering the last few years of available US Census Bureau population estimates.

The Bismarck-Mandan MPO did not specifically project population counts.

Figure 1.14: City of Bismarck - Bismarck ND Metropolitan Statistical Area Population Projections: Rate of Change, 2020 and 2040



Based on 2010 US Census Bureau and the City of Bismarck May 2015, "2010-2040 Metropolitan Population Projections"

As the preceding information indicates there are significant differences between the Woods and Poole population projections compared to the City of Bismarck population projections. A variety of factors may be contributing to the differences. The Woods and Poole projections, used in this report, were developed in 2012 compared to the City of Bismarck projections which were developed in 2015. Since the growth trends have increased significantly the past few years it is possible the recent surge in population may not have been fully accounted for in the Woods and Poole projections as they were three years older than

