METROPOLITAN PROFILE 2016

ANNUAL REPORT OF THE FARGO-MOORHEAD METROPOLITAN AREA

community & demographics

roadway system

freight & interstate travel

bicycle & pedestrian network

transit network

PREPARED BY:

FARGO-MOORHEAD METROPOLITAN COUNCIL OF GOVERNMENTS

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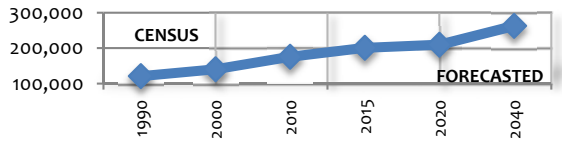
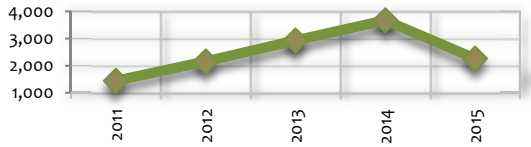
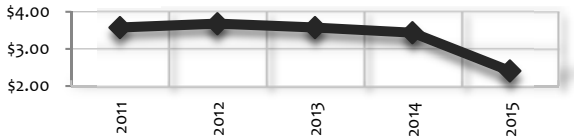
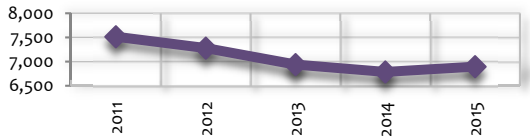
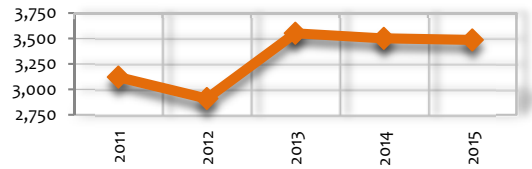
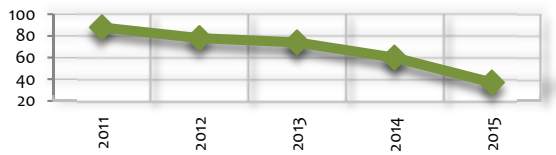
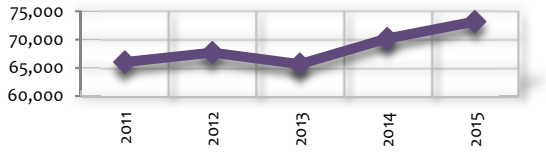
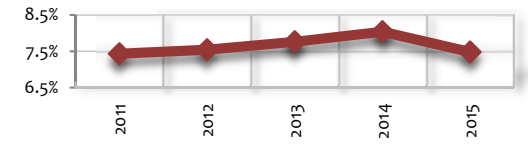
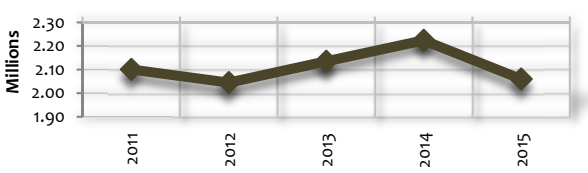
TRACKING THE TRENDS: Regional and Transportation Indicators for 2016

	SUMMARY	TREND	ANALYSIS
Population of the Urban Area (Fargo, Moorhead, West Fargo, Dilworth, Horace)	*The region is expected to continue to experience significant population growth in the coming decades*		Cities within the urbanized areas have experienced strong population growth over the past three decades, with forecasts showing a continuation of growth to 2040
Residential Household Permits (Fargo, Moorhead, West Fargo, Dilworth, Horace)	*After peaking in 2014, the number of building permits issued has stabilized*		After a steady increase from 2010 to 2014, the number of building permits issued declined significantly in 2015. The ratio of multi-family to single-family homes has increased sharply over the past five years.
Fuel Prices	*The price of gas declined 30% from 2014 to 2015*		The price of gas dropped sharply in 2015, leading to increased vehicle miles travelled and lower transit ridership.
Vehicle Miles Traveled Per Capita	*Local VMT has declined nearly 20% since 2008*		Nationally, VMT per capita was 9,458 in 2014, significantly higher than at the local level. Local VMT per capita has declined significantly over the past decade.
Safety: Vehicle Crashes within the Urban Area	*Since 2012, vehicle crashes within the urban area have risen over 20%*		After a steady decrease from 2009 to 2012, the number of crashes in the urban area has risen sharply over the past three years.
Safety: Bicycle and Pedestrian Crashes in the Urban Area	*Crashes involving bicycles and/or pedestrians have decreased 58% since 2011*		Bicycle and pedestrian crashes have declined significantly in the past 5 years, from 88 in 2011 to only 37 in 2015.
Traffic Volume: AADT at I-94/Red River Bridge	*Traffic volume along I-94 on the Red River Bridge reached an all-time high in 2015*		Traffic volumes along I-94 continues to increase. 2015 witnessed an average annual daily traffic volume of 73,191 at the Red River Bridge, the highest recorded mark to date.
Truck Volume: Percent Truck at I-94/Red River Bridge	*The proportion of truck travel along I-94 has increased by 10% over the past decade*		After reaching an all-time high in 2014, truck traffic along I-94 moderated in 2015. Overall, the I-94 corridor is an increasingly important component of interstate freight movement.
Public Transit: Fixed Route Ridership	*Transit ridership in the Fargo-Moorhead area remains steady*		Fixed-route ridership declined slightly from 2014, likely due to the combination of low gas prices, the introduction of on-demand taxi services, and the implementation of a bike-share program in Fargo.

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Interested Persons, Stakeholders, Jurisdictions, Agencies and Organizations --

The Fargo-Moorhead Metropolitan Council of Governments (Metro COG) is pleased to present the 2016 Metropolitan Profile (Profile), a document previously known as the Surveillance and Monitoring Report for the Fargo-Moorhead Metropolitan Area. The data presented within this Profile pertains to the 2015 calendar year (January 1, 2015 through December 31, 2015).

As background, Metro COG has produced the Metropolitan Transportation Surveillance and Monitoring Report since 1981. Over time, it has taken various forms in order to ensure compliance and compatibility with relevant surface transportation authorization. Under Fixing America's Surface Transportation Act ("FAST Act"), the Profile has become an essential performance management tracking tool.

The Profile is structured to document and monitor the following:

(a) Changes, improvements, and projects affecting the transportation system;
(b) Demographic and socio-economic conditions affecting the region;
(c) Land use and development patterns;
(d) The accuracy of projections made within Metro 2040 – Mobility for the Future, Metro COG's Long Range Transportation Plan (LRTP); and
(e) Implementation of the Transportation Improvement Program (TIP).

The Metro COG Policy Board believes this data to be critical to both accurately represent the state of the transportation network and maintain and implement elements of the Metropolitan Transportation Planning Program such as the TIP, LRTP, and regional travel demand model (TDM).

For convenience, the Profile is separated into the following chapters:

Chapter 1: Community Profile – a summary of demographic, socio-economic, and land use patterns in the region
Chapter 2: Roadway System – an analysis of the region's roadways and summary of the annual roadway network changes
Chapter 3: Freight & Interstate Travel – airline passenger and cargo, passenger rail, and freight movement within the region
Chapter 4: Bicycle & Pedestrian Network – an analysis of the usage, operations, network changes, and safety of the bicycle and pedestrian system
Chapter 5: Transit System – an overview of the of the operations, performance trends, and inventories of the region's transit system providers

It is Metro COG's goal to continue to enhance the ease and accuracy of collecting and reporting metropolitan transportation data as well as improve accessibility to this information for all interested persons.

Any questions or comments on the content of this document should be directed to Metro COG. Supporting plans, studies, and other transportation data for the Fargo-Moorhead Metropolitan Area is available by contacting Metro COG by phone at 701.232.3242, by email at metrocog@fmmetrocog.org, by visiting Metro COG's website at www.fmmetrocog.org, or in person at Case Plaza, Suite 232, One 2nd Street North, Fargo, ND 58102.

Sincerely,

Dave Piepkorn
Chair, Metro COG Policy Board

William Christian
Executive Director, Metro COG

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SUMMARY OF ACRONYMS

AADT	**Average Annual Daily Traffic**
ACS	**American Community Survey (U.S. Census Bureau)**
ADA	**Americans with Disabilities Act of 1990**
ADT	**Average Daily Traffic**
ATAC	**Advanced Traffic Analysis Center**
ATR	**Automatic Traffic Recorder**
CFR	**Code of Federal Regulations**
CSAH	**Minnesota County State Aid Highway**
DNR	**Department of Natural Resources**
FHWA	**Federal Highway Administration**
FTA	**Federal Transit Administration**
HSS	**U.S. Dept. of Health and Human Services**
HUD	**U.S. Dept. of Housing & Urban Development**
ITS	**Intelligent Transportation System**
LRTP	**Long-Range Transportation Plan**
MATBUS	**Metro Area Transit of Fargo-Moorhead**
Metro COG	**Fargo-Moorhead Metropolitan Council of Governments**
MnDOT	**Minnesota Department of Transportation**
MPA	**Metropolitan Planning Area**
MPO	**Metropolitan Planning Organization**
MSA	**Metropolitan Statistical Area (includes all of Cass County and Clay County)**
MSUM	**Minnesota State University – Moorhead**
NAICS	**North American Industry Classification System**
NDDOT	**North Dakota Department of Transportation**
NDSU	**North Dakota State University**
PPP	**Metro COG's Public Participation Plan**
TAZ	**Traffic Analysis Zone**
TDM	**Travel Demand Model**
TDP	**Transit Development Plan**
TH	**Minnesota Trunk Highway**
TIP	**Transportation Improvement Program**
UPWP	**Unified Planning Work Program (Metro COG's bi-annual work program)**
USC	**United States Code**
UZA	**Urbanized Area (or Federal Aid Urbanized Area FAUA)**
VMT	**Vehicle Miles Traveled**
VSS	**Valley Senior Services**

COMMUNITY PROFILE

The Fargo-Moorhead Metropolitan Council of Governments (Metro COG) is both the designated Council of Governments (COG) and Metropolitan Planning Organization (MPO) for the greater Fargo-Moorhead Metropolitan Area. An MPO is a transportation policy-making organization comprised of representatives from local government and transportation authorities. The Federal Surface Transportation Assistance Act of 1973 requires the formation of a MPO for any urbanized area with a population greater than 50,000. MPOs ensure that existing and future expenditures for transportation projects and programs are based on a comprehensive, cooperative, and continuing planning process, known as the "3-C" process.

The core of an MPO is the urbanized area, which is initially identified and defined by the U.S. Census Bureau as part of the decennial Census update. This boundary is adjusted by local officials and approved by the North Dakota Department of Transportation (NDDOT), the result of which is the official Adjusted Urban Area Boundary (known as the UZA). The UZA boundary is used to determine the type of transportation funding programs potential projects may be eligible to receive. In 2012 Metro COG worked closely with local jurisdictions, NDDOT, and the Minnesota Department of Transportation (MnDOT) to establish an Adjusted Urban Area Boundary for the Fargo-Moorhead area. This Adjusted UZA was subsequently approved by the Metro COG Policy Board, FHWA, and both the Minnesota and North Dakota Departments of Transportation in 2013.

In addition to the urban area (defined as the urbanized jurisdictions plus any additional urban areas immediately adjacent to the jurisdiction limits), the MPO boundary includes any contiguous areas which may become urbanized within a twenty-year forecast period.[1] Collectively, this area is known as the Metropolitan Planning Area, or MPA. Metro COG's MPA boundary was most recently expanded in 2013 and is comprised of approximately 1,073 square miles (687,000 acres), 14 cities, and 30 townships. The MPA boundary is effectively Metro COG's "study area" or area of influence respective to the metropolitan planning program. These areas are significant not only as potential future population centers, but also due to their proximity to existing and future transportation assets of regional significance. Although many of these areas are not developed nor are they likely to experience development pressure in the near future, they are participants in the required metropolitan planning process.

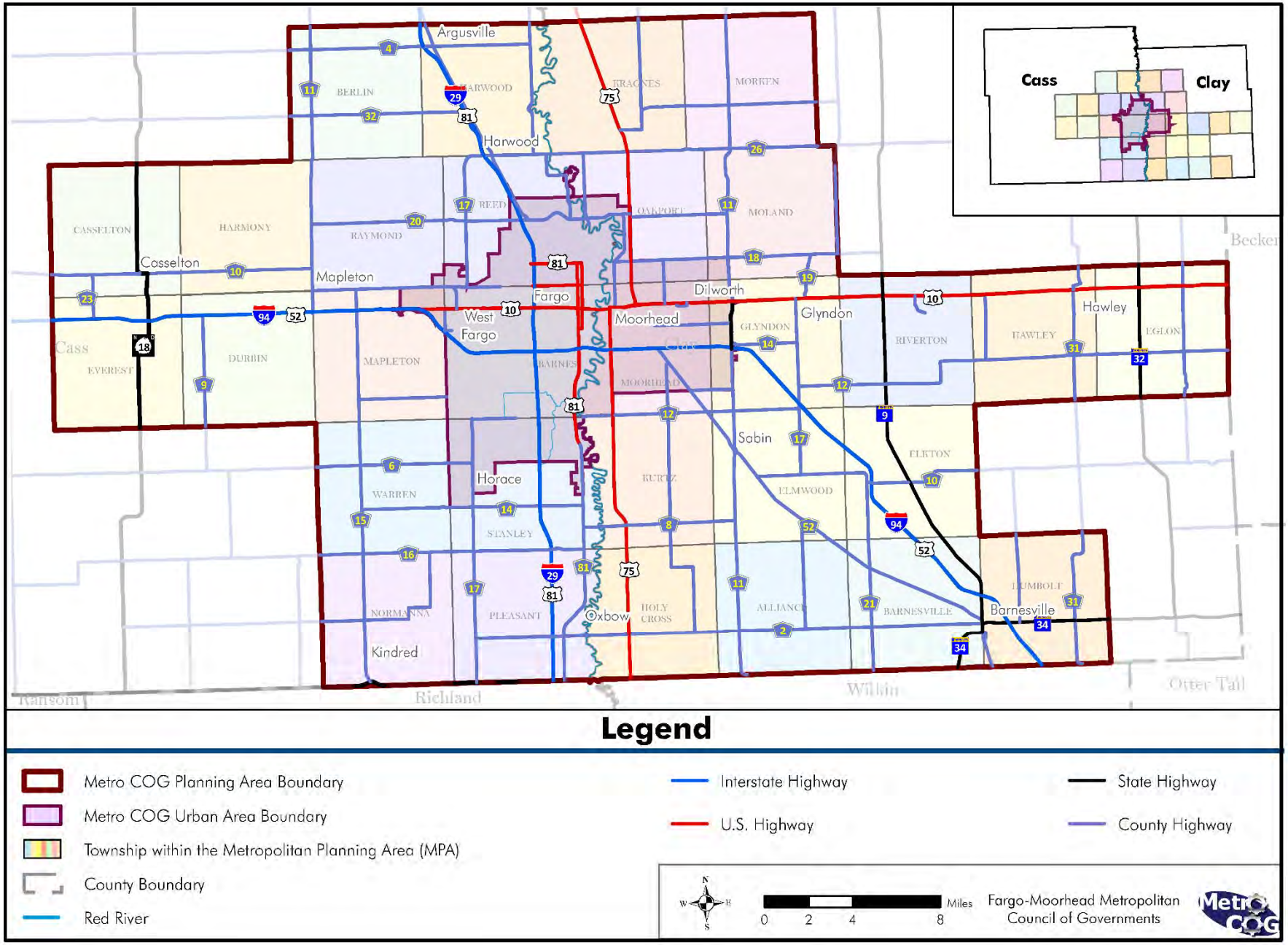
The map on Figure 1 provides an overview of these boundaries for the Fargo-Moorhead area, specifically depicting:

a) The Metropolitan Planning Area Boundary and townships within the MPA;
b) The Adjusted UZA boundary; and
c) Cities within the MPA.

This chapter of the Metropolitan Profile (Profile) provides information on key demographic, socioeconomic, housing, employment, and land use trends within the metropolitan area. There are many factors that affect the transportation needs of the area over the next few decades. As the region grows, diversifies, and the population becomes older, transportation needs change. Further, the types of businesses and industries that take root in the region and where people settle all fundamentally impact how the transportation system needs to adapt in order to serve the traveling public and the movement of freight. These factors are essential in assessing the current and future conditions affecting the transportation needs of the region and play a critical role in establishing the transportation planning program.

[1] Pursuant to Title 23, Section 450.104 of the Code of Federal Regulations

Figure 1. Fargo-Moorhead Adjusted Urban Area and Metropolitan Planning Area Boundaries



Source: Metro COG, 2016

Population

In 2012 Metro COG worked in conjunction with its stakeholders and contracted McKibben Demographic Research to create the Demographic Forecast for the Fargo-Moorhead Metropolitan Area. The report established demographic projections through the year 2040 for the greater Fargo-Moorhead region. These projections have been incorporated within the 2016 Metro Profile in conjunction with decennial Census data and American Community Survey (ACS) data, as applicable. Figures reported in this report are derived from the 2010 Census and, where possible, the 2010-2014 ACS five-year estimates.

In 2016 Metro COG will commence work on updating the metro-wide demographic projections for the 2045 horizon year. These projections will provide a comprehensive assessment of the growth trends affecting communities within the region and provide five-year population, household, and employment projections for communities within the planning area boundary from 2015 to 2045. As similar studies provided by Metro COG have historically tended to under estimate growth in the metro area, the updated projections will evaluate past methods and assumptions and make appropriate methodological changes.

The 2012 Demographic Forecast Study resulted in the development of two growth scenarios. Scenario B was termed 'Most Likely' and took into account a number of changing variables at the local, regional, and national level. Scenario A was identified as the 'High Growth' scenario and was formulated under a more aggressive set of assumptions. In December of 2012 the Metro COG Policy Board approved the use of the "High Growth" or Scenario A demographic projection for use within the transportation planning program. The McKibben projections presented within this section are derived from this 'High Growth' scenario.

The Fargo-Moorhead metropolitan area is growing, with a 2010 MSA population of 208,777 and a 2015 MSA estimate of 233,836. The U.S. Census Bureau estimates the 2015 urban area (Fargo, Moorhead, West Fargo, Dilworth, Horace) population to be 201,036. Table 1 on the following page shows the area's change in population since 1990 and the future population of the urban and rural MSA as projected by the 2012 Metro COG/McKibben Demographic Forecast Study.

The 2040 population projection for the MSA represents a 42.8 percent change from 2010, with West Fargo experiencing the highest growth rate at 75 percent. While the MSA as a whole is projected to experience significant urban growth, the rural portions of Cass County are expected to lose population, with an overall decrease of approximately eight percent. Much of the decline in population in these rural areas can be attributed to lower rates of natural growth due to a projected older population as well as increased migration of older residents from rural areas to the urban core, which has the services to better accommodate older populations.

Closely monitoring population and demographic changes affecting the region is a critical component of the transportation planning process. Likewise, informed projections of future population and development scenarios provides planners and policymakers the knowledge needed to make decisions to plan for future growth and the ability to better forecast both highway and multimodal improvement scenarios.

Age and Sex

The age and sex composition of a region is fundamental component in projecting future population and economic changes. The population of the U.S. as a whole continues to grow older, with a median age of over 40 in many states. Concurrently, an increase in the number of older-aged males is also occurring in many parts of the country. In the coming years as the "baby-boomer" generation continues to reach retirement age, a dramatic transformation in the labor force will Much like the rest of the nation, the Fargo-Moorhead metropolitan area is aging. Yet as a whole, the median age in our region is significantly younger than that of either Minnesota or North Dakota. A population pyramid representing the age and sex distribution for the MSA is presented in Figure 2.

Overall, the median age for residents of the Fargo-Moorhead MSA is under 32 years of age, with a median age of 32.1 years in Clay County and 31.7 years in Cass County. This is significantly less than the median age in North Dakota (36.4), Minnesota (37.6), or the nation as a whole (37.3). McKibben projects that the median age of the MSA

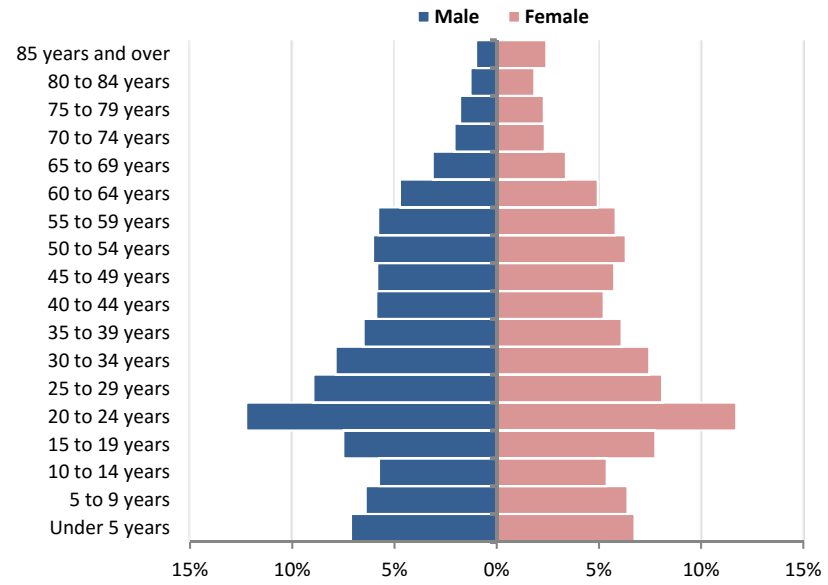
will increase to 36.1 years by 2040, with a significant rise in the proportion of elderly populations in the area. This is mainly due to a combination of a predicted reduced mortality rate and a higher in-migration rate of the elderly from the bordering service area over the next 25 years. The percentage of those who are 65 years of age and older is projected to increase 84 percent between 2010 and 2040, while those in the 0 to 24 age bracket is expected to increase by only 25 percent. Table 2 outlines the projected rate of change in each age group between 2010 and 2040 per the 2012 Demographic Forecast for the Fargo-Moorhead Metropolitan Area.

Table 1. Fargo-Moorhead MSA Estimated and Projected Populations

Jurisdiction	Population				Population Change		Population Projections					
	1990	2000	2010	2015	1990-00	2000-10	2015	2020	2025	2030	2035	2040
Fargo	74,111	90,599	105,549	118,523	22.20%	16.50%	113,540	122,050	130,370	139,030	147,260	154,170
Moorhead	32,295	32,177	38,065	42,005	-0.40%	18.20%	43,715	46,551	49,444	52,187	54,819	56,982
West Fargo	12,287	14,940	25,830	33,597	21.60%	72.80%	30,010	35,020	38,290	41,020	43,450	45,190
Dilworth	2,562	3,001	4,024	4,366	17.10%	34%	4,360	4,650	4,890	5,130	5,380	5,600
Horace	662	915	2,430	2,545	38.22%	165.57%	2,590	2,690	2,850	2,880	2,920	2,940
Urban Total	**121,917**	**141,632**	**175,898**	**201,036**	**16.17%**	**24.19%**	**194,215**	**210,961**	**225,844**	**240,247**	**253,829**	**264,882**
Urban Cass	87,060	106,454	133,809	154,665	22.28%	25.70%	146,140	159,760	171,510	182,930	193,630	202,300
Rural Cass	15,814	16,684	15,969	16,847	5.50%	-4.29%	17,000	14,580	13,170	10,770	7,560	14,400
Cass Total	**102,874**	**123,138**	**149,778**	**171,512**	**19.70%**	**21.63%**	**163,140**	**174,340**	**184,680**	**193,700**	**201,190**	**216,700**
Urban Clay	34,857	35,178	42,089	46,371	0.92%	19.65%	48,075	51,201	54,334	57,317	60,199	62,582
Rural Clay	15,585	16,051	16,910	15,953	2.99%	5.35%	15,305	16,339	17,176	17,964	18,401	18,788
Clay Total	**50,442**	**51,229**	**58,999**	**62,324**	**1.56%**	**15.17%**	**63,380**	**67,540**	**71,510**	**75,280**	**78,600**	**81,370**
MSA Total	**153,269**	**174,367**	**208,777**	**233,836**	**13.77%**	**19.73%**	**226,520**	**241,880**	**256,190**	**268,980**	**279,790**	**298,070**

Sources: U.S. Census Bureau: 1990 - 2010 Decennial Censuses and 2015 Population Estimate; McKibben Demographic Research, 2012

Figure 2. Age and Sex Distribution for the Fargo-Moorhead MSA



Source: U.S. Census Bureau, 2010-2014 5-Year American Community Survey

Table 2. Metro COG Projected Percent Change by Age Group, 2010 to 2040

Age Group	% Change	Age Group	% Change	Age Group	% Change
Under 5	13.41%	**30-34**	40.71%	**60-64**	70.10%
5-9	39.56%	**35-39**	63.84%	**65-69**	79.90%
10-14	47.23%	**40-44**	90.73%	**70-74**	100.10%
15-19	26.21%	**45-49**	53.34%	**75-79**	105.22%
20-24	9.35%	**50-54**	44.17%	**80-84**	96.79%
25-29	15.00%	**55-59**	45.99%	**85 & Over**	79.96%

Source: Demographic Forecast for the Fargo-Moorhead Metropolitan Area (2012)

Race and Ethnicity

While traditionally not a racially or ethnically diverse area, minority populations in the Fargo-Moorhead area have been increasing at a higher rate than historical levels. Based upon five-year ACS annual estimates, the percentage of the total population who identified themselves as White fell 1.5 percent over the five-year period between 2010 and 2014, while Black, Asian, and multi-racial populations grew relatively significantly. The majority of growth in minority populations has occurred in the City of Fargo, which experienced a 2.5 percent decline in the proportion of White population since 2010. Table 3 provides an overview of race and ethnicity and the percentage change of the total population over a five-year period of each census-defined ethnic group for individual cities of the urban core; the urban core as a whole; Cass and Clay counties; and the MSA. Figure 3 provides a graph of the overall racial composition of the MSA based on the ACS estimates.

The data illustrates that the urban core is diversifying, with non-white populations growing at a higher rate. International and domestic migration, in part due to a strong local economy, account for a significant amount of the increased minority growth within the region. Data show that the majority of migrants and refugees coming into the area are between the ages of 18 and 35, that is, within an age group where individuals are likely to have children. Continued in-migration coupled with a high proportion of minorities within child-bearing age groups means that the Fargo-Moorhead region will likely continue to diversify in the coming decades.

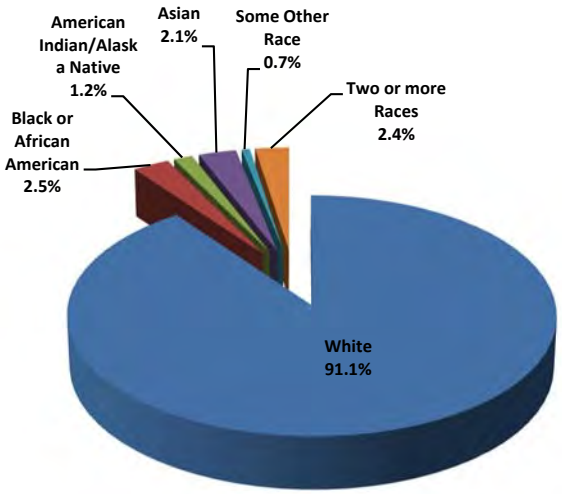
The map depicted in Figure 4 (page 19) shows the spatial distribution of minority populations in the urban area of the MSA. Census blocks where 25 percent of the total block population was "non-White" per the 2010-2014 ACS estimates were mapped as minority blocks. The map indicates a correlation between minority and low-income areas. As outlined in the adopted Title VI Plan, Metro COG focuses outreach efforts in these areas in order to ensure residents are fully aware of any projects which may affect the area.

Poverty

With a strong and diverse economy and one of the lowest unemployment rates in the nation, the Fargo-Moorhead Metropolitan Area has a poverty rate significantly lower than many similar sized cities. Nonetheless, poverty is undeniably a significant issue in the area and Metro COG understands the importance of identifying the regions of the MSA that are most affected. The map in Figure 3 depicts census block groups which are identified as "low income" per the adopted Metro COG definition. The areas depicted on the map had cumulative median household income less than $21,681 dollars per the 2010-2014 ACS. The threshold for poverty is based upon the 2016 Health and Human Services (HHS) guidelines and the average household size in the MSA. As is generally the case with minority populations, low-income areas are more concentrated in the urban core, and household income tends to rise on the fringe areas of the UZA.

It is important to note that the low-income areas, while all represented with the same color on the map, vary widely in the extent in which they are impoverished. For instance, the poverty rate ranged from barely making the cutoff at 25.6 percent to a block group which reported an 88 percent poverty rate. Additionally, the number of households in a block group can vary widely, from 99 to 1,400 in the case of highly impoverished areas. Thus, a highly populated block group has far more households and people affected by poverty than does a smaller one with a similar proportion. Finally, it's important to note that many of the low-income block groups are largely comprised of students at the three major local universities, which is to be expected for students whose primary focus is scholastic activities.

Figure 3. Percent of Total Population by Race for the Fargo-Moorhead MSA



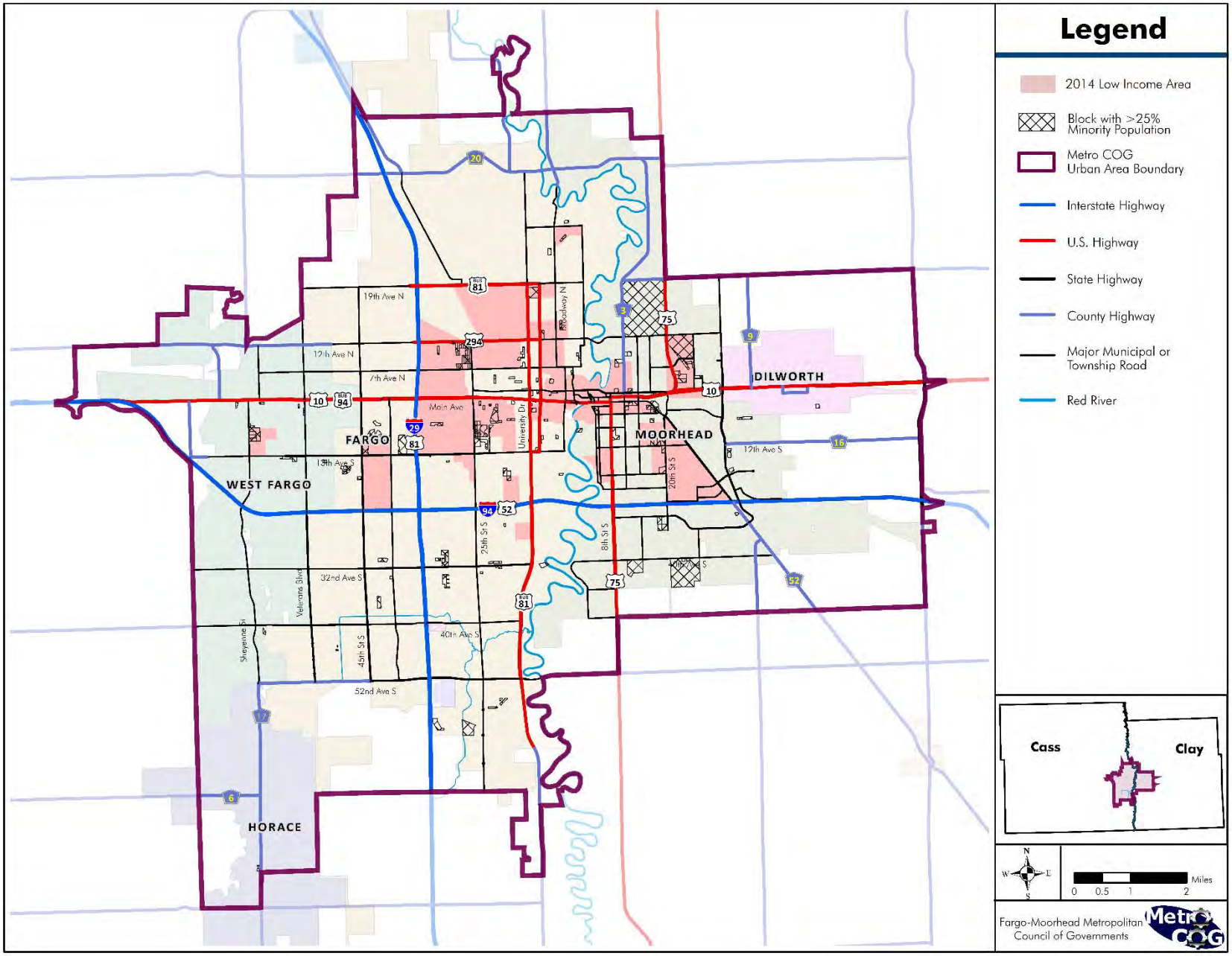
Source: U.S. Census Bureau, 2010-2014 5-Year American Community Survey

Table 3. Population Composition and Percent Change by Race and Ethnicity

Race and Ethnicity, 5-year ACS Estimate						% Change of Total Population, 2006-2010 to 2010-2014
Race/Ethnicity	2006-2010	2007-2011	2008-2012	2009-2013	2010-2014	
White						
Fargo	91.6%	90.9%	90.3%	90.0%	89.2%	**-2.4%**
Moorhead	90.8%	90.6%	90.2%	90.5%	90.3%	**-0.5%**
West Fargo	91.1%	91.2%	91.4%	91.0%	90.9%	**-1.2%**
Dilworth	96.0%	95.1%	95.9%	96.4%	94.2%	**-1.8%**
Horace	96.2%	98.3%	98.0%	98.5%	98.3%	**2.1%**
Urban Total	**91.5%**	**91.1%**	**90.7%**	**90.5%**	**89.9%**	**-1.6%**
Cass County	92.3%	92.0%	91.5%	91.2%	90.6%	**-1.7%**
Clay County	93.2%	92.9%	92.6%	92.8%	92.4%	**-0.8%**
MSA Total	**92.6%**	**92.2%**	**91.8%**	**91.7%**	**91.1%**	**-1.5%**
Black						
Fargo	2.2%	2.3%	2.6%	2.7%	3.1%	**0.9%**
Moorhead	2.0%	2.3%	2.3%	2.2%	2.3%	**0.3%**
West Fargo	2.7%	2.8%	3.0%	3.5%	3.6%	**0.9%**
Dilworth	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**
Horace	1.4%	0.8%	0.4%	0.3%	0.0%	**-1.4%**
Urban Total	**2.2%**	**2.3%**	**2.5%**	**2.6%**	**2.9%**	**0.7%**
Cass County	2.1%	2.1%	2.4%	2.6%	2.9%	**0.8%**
Clay County	1.3%	1.5%	1.5%	1.5%	1.6%	**0.3%**
MSA Total	**1.8%**	**2.0%**	**2.1%**	**2.3%**	**2.5%**	**0.7%**
American Indian/Alaska Native						
Fargo	1.4%	1.4%	1.5%	1.4%	1.4%	**0.0%**
Moorhead	2.1%	2.3%	1.9%	1.9%	1.3%	**-0.8%**
West Fargo	2.0%	1.4%	1.1%	0.7%	0.9%	**-1.1%**
Dilworth	0.5%	0.7%	0.6%	0.4%	3.1%	**2.6%**
Horace	0.4%	0.0%	0.3%	0.2%	0.2%	**-0.2%**
Urban Total	**1.5%**	**1.6%**	**1.5%**	**1.4%**	**1.3%**	**-0.2%**
Cass County	1.3%	1.3%	1.3%	1.2%	1.2%	**-0.1%**
Clay County	1.5%	1.7%	1.5%	1.5%	1.3%	**0.2%**
MSA Total	**1.4%**	**1.4%**	**1.4%**	**1.3%**	**1.2%**	**-0.2%**
Asian						
Fargo	2.6%	2.9%	2.8%	2.8%	3.1%	**0.5%**
Moorhead	1.7%	1.8%	1.6%	1.8%	1.7%	**0.0%**
West Fargo	1.1%	1.0%	1.8%	2.3%	1.8%	**0.7%**
Dilworth	1.5%	1.8%	2.6%	0.9%	0.0%	**-1.5%**
Horace	0.5%	0.2%	0.3%	0.3%	0.3%	**-0.2%**
Urban Total	**2.1%**	**2.3%**	**2.4%**	**2.4%**	**2.5%**	**0.4%**
Cass County	2.0%	2.2%	2.3%	2.4%	2.5%	**0.5%**
Clay County	1.3%	1.4%	1.2%	1.2%	1.1%	**-0.2%**
MSA Total	**1.8%**	**2.0%**	**2.0%**	**2.0%**	**2.1%**	**0.3%**
Some other race						
Fargo	0.7%	0.7%	0.7%	0.6%	0.7%	**0.0%**
Moorhead	1.0%	0.8%	1.2%	0.9%	1.1%	**0.1%**
West Fargo	1.4%	1.2%	1.2%	0.7%	0.4%	**-1.0%**
Dilworth	0.2%	0.3%	0.3%	0.3%	0.0%	**-0.2%**
Horace	0.9%	0.4%	0.6%	0.4%	0.9%	**0.0%**
Urban Total	**0.8%**	**0.7%**	**0.9%**	**0.6%**	**0.7%**	**-0.1%**
Cass County	0.8%	0.8%	0.7%	0.6%	0.6%	**-0.2%**
Clay County	0.9%	0.8%	1.0%	0.8%	0.8%	**-0.1%**
MSA Total	**0.8%**	**0.7%**	**0.8%**	**0.6%**	**0.7%**	**-0.1%**
Two or more races						
Fargo	1.5%	1.8%	2.1%	2.5%	2.5%	**1.0%**
Moorhead	2.3%	2.2%	2.8%	2.8%	3.4%	**1.1%**
West Fargo	2.3%	2.4%	1.5%	1.9%	2.3%	**0.0%**
Dilworth	1.6%	2.1%	0.7%	2.1%	2.7%	**1.1%**
Horace	0.5%	0.3%	0.4%	0.3%	0.3%	**-0.2%**
Urban Total	**1.8%**	**1.9%**	**2.1%**	**2.4%**	**2.6%**	**0.8%**
Cass County	1.5%	1.7%	1.8%	2.1%	2.3%	**0.8%**
Clay County	1.8%	1.7%	2.1%	2.2%	2.7%	**0.9%**
MSA Total	**1.6%**	**1.7%**	**1.9%**	**2.2%**	**2.4%**	**0.8%**
Hispanic/Latino (of any race)						
Fargo	2.1%	2.4%	2.5%	2.7%	2.8%	**0.7%**
Moorhead	4.1%	4.0%	4.4%	4.5%	4.8%	**0.7%**
West Fargo	2.2%	1.6%	1.4%	1.0%	1.0%	**-1.2%**
Dilworth	7.3%	6.2%	5.1%	5.5%	4.0%	**-3.3%**
Horace	1.4%	1.1%	1.3%	1.2%	1.7%	**0.3%**
Urban Total	**2.7%**	**2.7%**	**2.8%**	**2.9%**	**2.9%**	**0.2%**
Cass County	2.0%	2.0%	2.1%	2.1%	2.2%	**0.2%**
Clay County	3.7%	3.6%	3.6%	3.7%	3.9%	**0.2%**
MSA Total	**2.5%**	**2.5%**	**2.5%**	**2.6%**	**2.7%**	**0.2%**

Source: U.S. Census Bureau, 2006-2010 to 2010-2014 5-Year American Community Surveys

Figure 4. Low Income and Minority (Environmental Justice) Areas in the Fargo-Moorhead UZA



Source: Metro COG, 2016

Housing and Dwelling Units

Table 4 summarizes the historical, estimated, and projected number of households within the MSA. The Metro COG/McKibben estimates are based upon the adopted 'High Growth' scenario. A dwelling unit is defined as any house, apartment, manufactured home, group of rooms, single occupied room, or living quarter. Included in the table are the most recent household estimates from the ACS, which indicate that the 'High Growth' scenario projection may underestimate the household growth within the region. The ACS estimates for 2014 already had exceeded the McKibben estimate for 2015, a pattern which may have more pronounced effects as the demographic model approaches the 2040 horizon year. These figures will be updated in 2016 as part of the Demographic Forecast Study.

The Metro COG/McKibben projections have historically underestimated household growth in the region. This is further reinforced by comparing the 2006 projections for the 2010 horizon year with the 2010 decennial Census data. Table 5 depicts the 2006 household estimates for the year 2010 with the actual 2010 Census counts, revealing that the McKibben/Metro COG projections were off by 3,508 households (approximately five percent). As expected, the West Fargo was the jurisdiction with the greatest discrepancy between projected and actual households, with a 11.8 percent under-estimate. The net effect of this low projection is substantial for traffic modeling purposes, where fewer households equates to fewer vehicular trips on the network. Additionally, analysis performed in preparation for the 2012 Demographic Forecast reveals that too much growth was assigned to unincorporated areas of Cass and Clay counties, and instead should have been assigned to areas within the incorporated limits of Fargo, West Fargo, Horace, Moorhead, and Dilworth.

Table 4. Estimated and Projected Households

Jurisdiction	U.S. Census Bureau		2012 McKibben Estimates						2010-2014 ACS
	2000 Census	2010 Census	2015	2020	2025	2030	2035	2040	
Fargo	39,268	46,791	49,590	52,920	55,330	58,600	61,510	64,580	52.138
Moorhead	11,660	14,304	15,840	16,910	18,130	19,440	20,430	21,350	15,542
West Fargo	5,771	10,348	11,810	13,230	15,020	17,150	18,890	19,730	11,642
Dilworth	1,160	1,595	1,710	1,820	1,910	1,950	2,050	2,130	1,705
Horace	300	810	850	880	930	950	970	980	851
Urban Total	58,159	73,848	78,950	85,760	93,390	98,090	102,880	108,770	81,878
Urban Cass	45,339	57,949	62,250	67,030	71,280	76,700	81,370	85,290	64,631
Rural Cass	5,976	5,950	5,870	5,910	5,930	5,990	5,960	5,920	6,584
Cass Total	51,315	63,899	68,120	72,940	77,210	82,690	87,330	91,210	71,215
Urban Clay	12,820	15,899	17,550	18,730	20,040	21,390	22,480	23,480	17,247
Rural Clay	5,850	6,380	6,290	6,390	6,650	6,930	7,180	7,370	7,140
Clay Total	18,670	22,279	23,840	25,120	26,690	28,320	29,660	30,850	24,387
MSA Total	**69,985**	**86,178**	**91,960**	**98,060**	**103,900**	**111,010**	**116,990**	**122,060**	**95,602**

Sources: U.S. Census Bureau: 2010 Decennial Census and 2010-2014 American Community Survey; McKibben Demographic Research, 2012

Table 5. Households: Historical Projections versus Actual

Jurisdiction	McKibben Estimate for 2010 (2006)	2010 Census	+/-
Fargo	45,321	46,791	-3.2% (1,470)
Moorhead	13,465	14,304	-6.2% (839)
West Fargo	9,254	10,348	-11.8% (1094)
Dilworth	1,490	1,595	-6.5% (105)
Metro Total	**69,530**	**73,038**	**+5.0% (3,508)**

Sources: U.S. Census Bureau: 2010 Decennial Census; McKibben Demographic Research, 2006

HOUSING OCCUPANCY AND OWNERSHIP RATES.

The ratio of single-family to multiple family dwelling units within a jurisdiction is an indication of population, density patterns, home ownership, and vacancy patterns. The City of Fargo has the lowest ratio of single-family to multi-family dwellings at approximately 42 percent while the City of Dilworth has the highest single-family ratio at approximately 74 percent. A summary of the ratios for the last five years is presented in Table 6. Overall the ratio of single-family to multi-family continues to decrease across the Fargo-Moorhead Metropolitan Area, an indication that increasing density and a higher proportion of multi-unit dwellings.

Table 6. Ratio of Single-Family to Multi-Family Dwelling Units

Jurisdiction	2011	2012	2013	2014	2015
Fargo	43.87%	43.15%	43.87%	42.68%	41.66%
Moorhead	66.74%	66.03%	66.14%	65.32%	65.21%
West Fargo	68.35%	65.72%	64.89%	65.68%	66.29%
Dilworth	73.87%	73.89%	73.92%	74.09%	74.33%
Total	**52.50%**	**51.59%**	**50.98%**	**51.14%**	**50.60%**

Source: Metro COG, 2016

Table 7 summarizes housing occupancy and home ownership patterns within the metro area. These estimates, which are based on the American Community Survey 2010-2014 dataset, show an overall owner occupancy rate of approximately 57 percent for the MSA. The ratio of owner to renter occupancy rate has remained relatively static over the past decade for the MSA as a whole, with only moderate change in individual jurisdictions.

Table 7. Housing Occupancy and Home Ownership by Jurisdiction

Jurisdiction	Total Units	Occupied Housing Units	Owner Occupied Housing Units	Housing Units - Percent Occupied	Housing Units - Percent Owner Occupied
Fargo	52,138	48,958	21,685	93.9%	44.3%
Moorhead	15,542	14,454	8,849	92.9%	61.2%
West Fargo	11,642	11,125	7,636	95.5%	68.6%
Dilworth	1,705	1,645	1,138	96.4%	69.1%
Horace	851	836	799	98.2%	95.6%
UZA Total	81,878	77,018	40,107	94.1%	52.1%
MSA	**95,602**	**89,558**	**50,923**	**93.6%**	**56.8%**

Source: U.S. Census Bureau, 2010-2014 American Community Survey

The historical tracking of apartment vacancy rates is an important indicator of the health of the local economy and provides immediate insight into population flux within the region. According to Appraisal Services, Inc., the December 2015 apartment vacancy figures indicate that multi-family rental supply may be outpacing demand in the metro area, particularly in West Fargo.[2] Overall the multi-family rental market is strong, and, coupled with a low unemployment rate and strong economy, helps to fuel in-migration into the MSA. Table 8 summarizes the annual apartment vacancy rates in the metro area.

Table 8. Multi-Family (Apartment) Annual Average Vacancy Rates

Jurisdiction	2011	2012	2013	2014	2015
Fargo	4.70%	2.90%	2.70%	3.4%	4.3%
Moorhead	7.20%	5.20%	5.00%	4.1%	7.5%
West Fargo	8.40%	2.60%	2.60%	5.8%	8.9%
Dilworth	6.00%	6.30%	4.50%	6.9%	6.3%
Total	**5.50%**	**3.20%**	**3.00%**	**3.8%**	**5.3%**

Source: Appraisal Services, Inc., 2015

AVERAGE HOUSEHOLD SIZE

Nationally, the average household size has decreased at a relatively steady rate over the first two decades of the 21st century. While this has been a contributing factor for slight inaccuracy in the McKibben 2040 population estimates, it is not as significant of a challenge to the transportation system in the Fargo-Moorhead MSA as it is in other cities in the country. Table 9 compares the most current ACS estimates for the counties of the MSA and jurisdictions comprising the urban core to the previous two census counts, showing very similar overall numbers to the 2010 Census counts.

Table 9. Average Household Size

Jurisdiction	2000 Census	2010 Census	2009-2013 ACS
Fargo	2.21	2.15	2.16
Moorhead	2.43	2.41	2.42
West Fargo	2.61	2.49	2.54
Dilworth	2.61	2.52	2.49
Cass County	2.32	2.27	2.28
Clay County	2.53	2.48	2.49

Source: U.S. Census Bureau: 2000 and 2010 Decennial Census; 2010-2014 American Community Survey

[2] Appraisal Services, Inc. Quarterly Report on Multi-Family Vacancy, December 1, 2015.

ANNUAL PERMIT DATA SUMMARY AND METRO COG HOUSEHOLD PROJECTIONS.

Metro COG gathers permit data from jurisdictions with in the MPA on an annual basis. This data, which includes permits issued for new single and multi-family housing construction as well as demolitions, is used to calculate the number of households within the UZA. Table 10 summarizes annual building permit data for 2011-2015 for municipalities within the two-county metro area and the urban core. The overall household projections and rate of change is depicted on Table 11. To note, these figures account for the reported multi-family and single family vacancy rates in each municipality, and do not reflect the total housing stock available within the region. In total, the four-city area added approximately 2,300 new units in 2015, a 2.7 percent increase over the previous year. The rapid increase in building permits is evidence of strong growth in the urban core. Multi-family housing unit construction in particular has grown significantly over the past five years. It should be noted, however, that overall apartment vacancy rates have risen over the past two years, making it more likely that multi-family construction will taper from its current pace in the next few years.

Figure 5 on the following page is a map depicting the spatial arrangement of residential permits for the urban area and the forecasted household growth by Traffic Analysis Zone (TAZ). This shows not only where the spatial arrangement of development is occurring, but also its relationship to the forecasted household growth used in development of Travel Demand Model (TDM). The map can be used as a basic tool to help monitor the household growth assumptions and adjust to accommodate actual growth patterns.

Figure 5 illustrates that both single- and multi-dwelling unit construction is concentrated in the following regions of the urbanized area:

- South of I-94 and west of I-29 in Fargo;
- South of 52nd Avenue and east of I-29 in Fargo;
- South of I-94 in West Fargo;
- Near US-75 and along 40th Avenue South in Moorhead;
- East of 34th Street and north of I-94 in Moorhead;
- Near 7th Street NE in Dilworth.

The spatial distribution of the 2015 dwelling unit construction permits continues the trend of the last few years, which featured growth concentrated primarily in the same areas. While the 2040 TAZs generally correspond with the observed areas of growth, the TDM will need to be adjusted in the future to better reflect where dwelling units are constructed in the metro area. In particular, the TAZs south of 52nd Avenue in Fargo and along US-75 in south Moorhead will need to be calibrated to accommodate the growth seen in these areas. These changes will be accounted for as Metro COG begins to develop the socio-economic data that feeds into the TDM.

Table 10. Reported Annual Building Permit Data*

Jurisdiction	2011		2012		2013		2014		2015	
	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF
Fargo	283	516	403	732	490	1202	336	1897	377	780
Moorhead	80	81	98	60	133	274	162	269	186	308
West Fargo	163	142	411	430	433	372	469	463	390	204
Dilworth	16	0	17	8	34	21	26	59	27	0
Horace			7	0						
UZA Total	**542**	**739**	**936**	**1230**	**1090**	**1848**	**993**	**2668**	**980**	**1292**
Clay County	27	0	35	0						
Harwood					14	0				
Glyndon	1	0			0	0				
Reiles Acres	8	0								
Mapleton	5	0	13	0	8	0				
Sabin										
Casselton	5	25			20	0				
Hawley	2	0			9	0	6	34	10	
Kindred	3	0	5	0	5	0				
Barnesville	7	0							6	

Source: Metro COG; cities of Fargo, Moorhead, West Fargo, Dilworth, Hawley

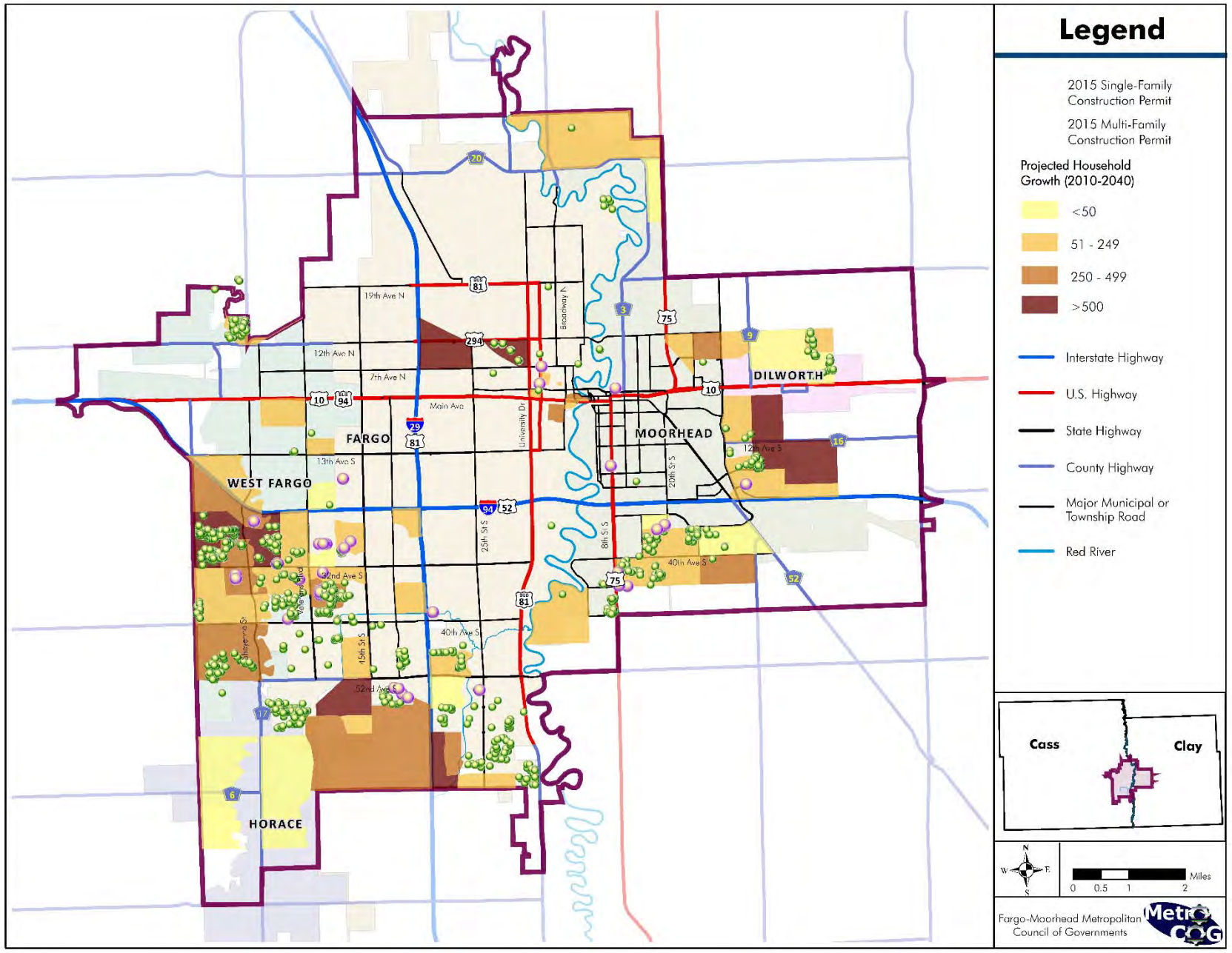
* Figures account for reported demolitions of single- and multi- family dwelling units.

Table 11. Annual Household Projections and Growth Rate

Jurisdiction	2011	'10-'11	2012	'11-'12	2013	'12-'13	2014	'13-'14	2015	'15-'16
Fargo	48,678	2.71%	50,220	3.17%	50,900	1.35%	53,036	4.20%	54,735	3.20%
West Fargo	10,737	2.35%	11,764	9.57%	12,540	6.60%	13,129	4.70%	13,476	2.64%
Moorhead	15,244	1.29%	15,416	1.13%	15,427	0.07%	15,974	1.83%	16,178	1.28%
Dilworth	1,555	1.17%	1,570	0.96%	1,616	2.93%	1,722	6.56%	1,749	1.57%
Total	**76,214**	**2.34%**	**78,970**	**3.62%**	**80,483**	**1.92%**	**83,862**	**3.86%**	**86,138**	**2.71%**

Source: Metro COG, 2016

Figure 5. 2015 Dwelling Unit Construction Permits and 2010 to 2040 Forecasted Household Growth by Traffic Analysis Zone



Source: Metro COG, 2016

Employment and Jobs Data

The economy of the Fargo-Moorhead Metropolitan Area is strong, with an unemployment rate among the lowest in the nation and employment opportunities across most sectors. Table 12 on the following page summarizes the 2011-2015 MSA employment by industrial sector, showing strong economic growth over the last five years across each employment category. Figure 6 (located on page 26) illustrates the spatial distribution of the most current employment data by TAZ within the urbanized area, with darker shades indicating those areas with the most jobs in 2010. Using projections based upon McKibben and other factors described below, Figure 6 shows the anticipated employment by TAZ by 2040. The variables which contributed to the employment distribution analysis for 2040 include:

- Designated growth areas per adopted city Future Land Use Plans and areas experiencing or anticipated to experience development pressure;
- The relationship to existing city boundaries and municipal services (e.g. water, sewer, etc.); and
- Existing infrastructure, including transportation, flood protection, and access.

EMPLOYMENT PROJECTIONS AND ACCURACY

In 2012 McKibben Demographic Research established employment projections based on 2010 Census data and other data sources for the MSA. As was the case with population projections, McKibben prepared two scenarios (Most Likely and High Growth) for consideration, and Metro COG's Policy Board formally adopted the 'High Growth' projection for use within Metro COG's transportation planning program. Table 13 on the following page displays these estimates and compares them to figures provided by a number of other established sources.

Due in part to methodological differences and the fact that the analyses were performed during a time of economic recession, the McKibben projections are significantly lower than estimates provided by the Bureau of Economic Analysis, Bureau of Labor Statistics, and Job Service North Dakota. For 2015, the first year in which projections are available, McKibben provides a total of 124,068 jobs in the MSA. In contrast, both Job Service North Dakota and the Bureau of Labor Statistics show a total of 139,000 jobs in the MSA for 2015. This represents an estimate approximately 12 percent below the actual figures for 2015. Clearly employment grew at a rate significantly higher than the McKibben projections, with the first horizon year projection deficit of approximately 15,000 jobs. Employment projections will be re-calibrated in 2016 with more up to date information as part of the TDM update process, resulting in future projection s that better reflect current trends in the Fargo-Moorhead metro area.

The spatial distribution of jobs within the urbanized area is projected to change significantly by 2040. In 2010, most employment opportunities were concentrated in the downtown areas of Fargo and Moorhead, with additional high levels of employment clustered near NDSU, MSUM, and Concordia. Similar to the trend we see with population and housing forecasts, future jobs are projected to rise significantly in southern and western areas of Fargo, near I-94 and along US-10 in West Fargo, and in southern and eastern portions of Moorhead. The highest employment growth area is centered in the area south of I-94 and west of I-29.

Table 12. Total Annual Employment by Industry

Employment Category	2011	2012	2013	2014	2015
Total Nonfarm	**123,700**	**129,000**	**132,200**	**136,700**	**139,000**
Total Private	106,800	112,000	114,900	119,100	121,300
Goods-Producing	16,200	17,600	18,000	19,000	19,400
Service-Providing	107,500	111,500	114,200	117,700	119,600
Private Service-Providing	90,600	94,500	96,900	100,100	101,900
Mining, Logging, & Construction	6,800	7,400	8,000	8,700	9,400
Manufacturing	9,400	10,200	10,000	10,300	10,000
Trade, Transportation, & Utilities	27,300	28,300	29,100	30,000	30,700
Wholesale Trade	8,000	8,400	8,900	9,100	9,100
Retail Trade	14,900	15,200	15,400	15,800	16,100
Transportation, Warehousing and Utilities	4,500	4,800	4,800	5,200	5,400
Information	3,400	3,300	3,300	3,300	3,100
Financial Activities	9,000	9,100	9,600	10,400	10,800
Finance & Insurance	7,400	7,500	7,900	8,700	9,000
Professional & Business Services	13,700	15,000	15,500	16,100	16,200
Professional & Technical Services	5,200	5,700	5,900	6,200	6,600
Administrative & Support Services	5,500	6,100	6,200	6,500	6,000
Educational & Health Services	19,600	20,600	21,300	21,400	22,000
Health Care & Social Assistance	17,100	17,900	18,600	18,900	19,500
Leisure & Hospitality	12,500	13,100	13,100	13,700	14,000
Accommodation & Food Services	11,100	11,600	11,600	12,100	12,200
Food Services & Drinking Places	9,100	9,500	9,400	9,800	9,900
Other Services	5,000	5,100	5,100	5,200	5,300
Government	16,900	17,000	17,300	17,600	17,600
Federal Government	2,400	2,300	2,300	2,400	2,400
State Government	5,800	5,700	5,700	5,700	5,700
Local Government	8,800	9,000	9,300	9,600	9,500

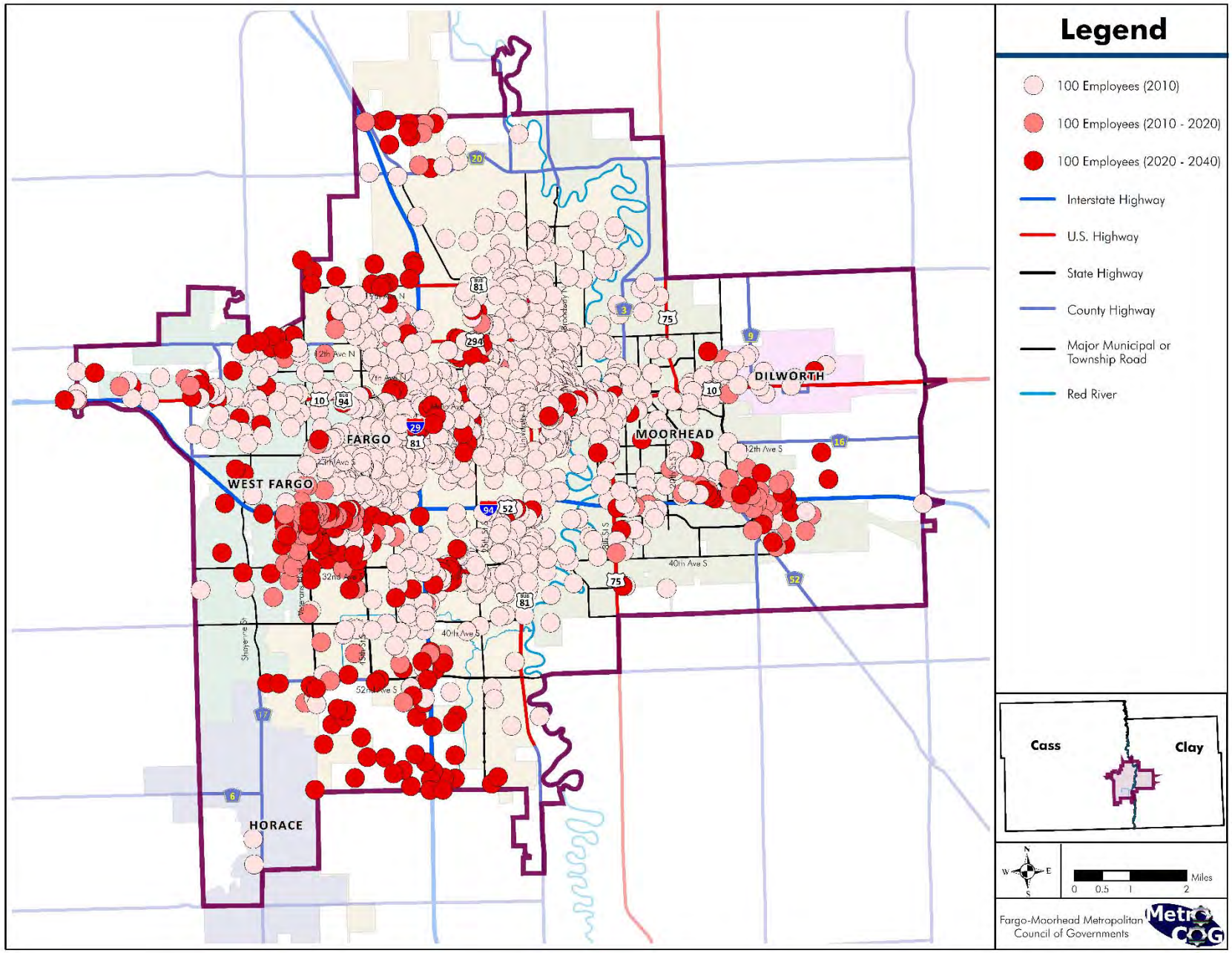
Source: Labor Market Information Center, Job Service North Dakota, CES Unit

Table 13. Selected Annual Employment Estimates and Projections

Source	2000	2010	2013	2014	2015	2020	2040
McKibben					**124,068**	131,935	162,429
U.S. Census Bureau	104,825	118,266					
Job Service ND		120,200	132,200	137,200	**139,000**		
U.S. Dept. of Commerce, Bureau of Economic Analysis		126,519	137,730	142,291			
U.S. Dept. of Labor, Bureau of Labor Statistics		120,200	132,400	136,700	**139,000**		

Source: : McKibben Demographic Research, 2012; U.S. Department of Labor; U.S. Department of Commerce; Job Service ND, U.S. Census Bureau

Figure 6. Forecasted Employment Growth by Traffic Analysis Zone, 2010-2040



Source: Metro COG, 2016

Land Use

In 2013, Metro COG collected parcel-level land use data from jurisdictions in the UZA. This, in conjunction with existing aerial photography, forms the foundation of the generalized existing land use database, which is represented in the map in Figure 7 on the following page. Using the aforementioned data sources, Metro COG classified each parcel into a discrete, general, land-use category. This process is useful not only for tracking land use changes within the Fargo-Moorhead Metropolitan Area, but also to ensure proper calibration of the TDM.

It is important to note that these classifications may not be consistent with land use or zoning terminology used within each jurisdiction. The intent of this land use data is to inform the metropolitan transportation planning program and therefore data should be considered in this context by interested individuals or entities.

METROPOLITAN LAND USE COMPARISON BY DECADE

Over the last four decades, the Fargo-Moorhead MSA has realized significant changes in regards to land use, land patterns, density, and growth. These changes impact the transportation system and are thus a critical consideration as the metro area completes project programming and develops long-range strategies to address system needs, issues, and limitations. Table 14 is a summary and comparison of land use data from 1977, 1986, 1991, and 2010.

Table 14. Metropolitan Area Land Use, 1977-2010

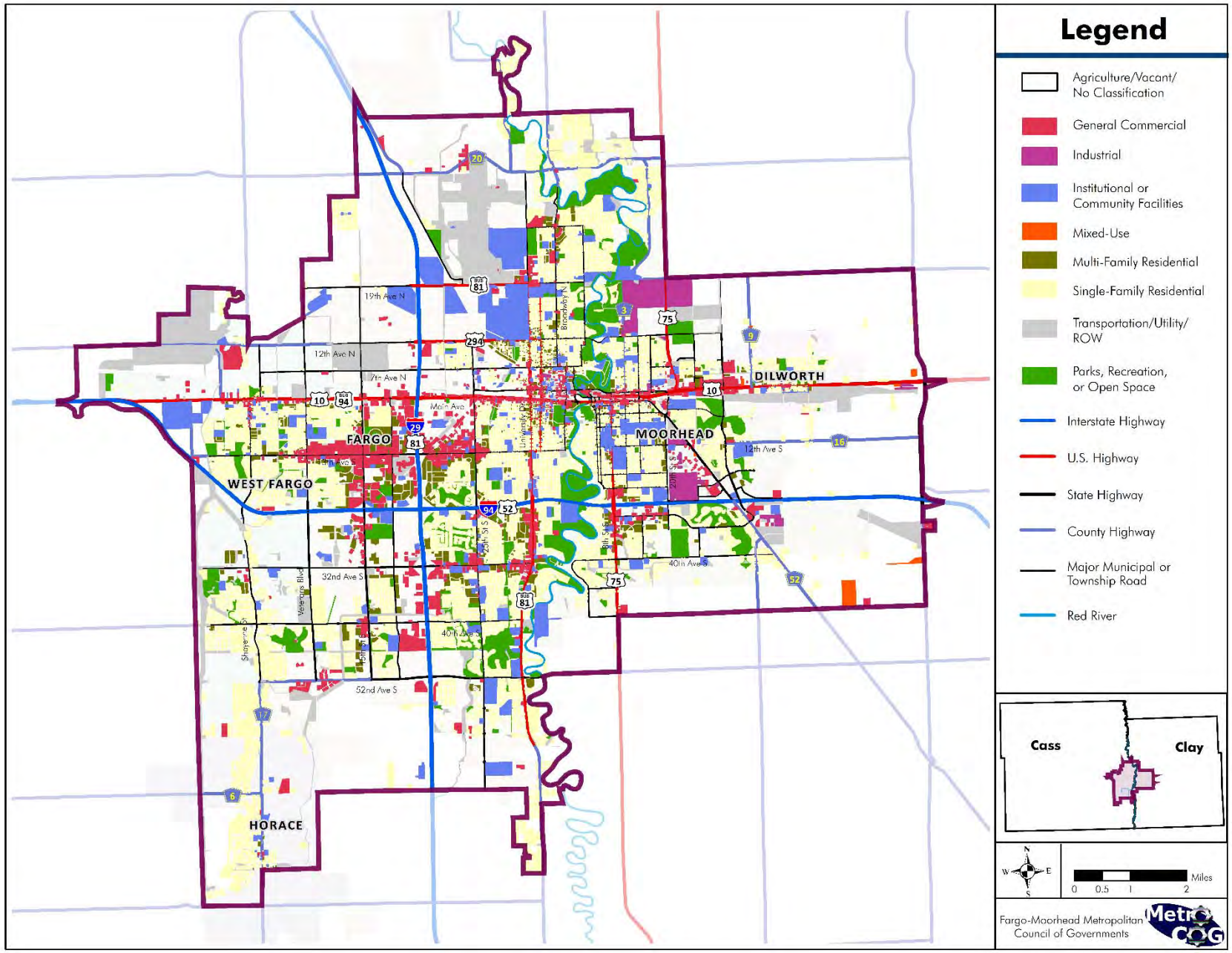
Land Use Category	1977 (Acres)	% of Metro Total	1986 (Acres)	% of Metro Total	1991 (Acres)	% of Metro Total	2010 (Acres)	% of Metro Total[3]
Single-Family Residential[4]	3,862	18%	4,814	17%	5,607	18%	9,713	18%
Multi-Family Residential	636	3%	1,031	4%	1,267	4%	1,693	3%
Industrial	535	3%	661	3%	750	3%	3,106	**6%**
Commercial	1,375	7%	2,211	8%	2,586	8%	2,521	5%
Transportation, Utilities, Etc.	6,929	32%	9,425	32%	9,480	30%	6,679	**12.5%**
Parks, Recreation & Open Space	1,349	6%	1,712	6%	2,409	8%	3,796	7%
Agricultural / Vacant / No code	5,728	27%	7,460	26%	7,183	23%	16,512	30%
Institutional / Community Facilities / Public	1,146	6%	1,778	6%	2,623	8%	3,009	6%
Total Acreage	21,560	100%	29,092	100%	31,905	100%	54,386	87%

Sources: Metro COG Metropolitan Land Use Element, 1978; Metro COG Metropolitan Land Use Report, 1986; Metro COG Metropolitan Land Use Report, 1991; Metro COG Metropolitan Profile, 2012

[3] Approximately 13 percent of the 2010 total acreage is unaccounted for in Table 14. It is most likely this acreage belongs in the "Transportation, Utilities, Etc." category.

[4] Includes "mobile" and "manufactured" housing

Figure 7. Generalized Metropolitan Land Use, 2013



Source: Metro COG, 2016

Based upon information contained within the land use comparison table and maps, the following observations and conclusions can be made in regards to the growth and change experienced in the metro area over the last four decades:

- From 1977 to 2010, significant commercial and industrial growth occurred adjacent to Main Avenue and the I-29 Corridor (north of I-94). The figures suggest industrial/commercial acreage represented approximately 9 percent of Metropolitan acreage in 1977 while in 2010 they constituted 11 percent.
- The proportion of single- and multi-family residential housing remained quite stable over time, even as residential housing expanded into fringe areas (e.g. south Fargo, West Fargo).
- Industrial development grew significantly in areas north of Main Avenue from 1991 to 2010.
- On average, the metro area increased by 994 acres per year for a total of 32,826 acres from 1997 to 2010.
- The city limits of Fargo, West Fargo, and Horace expanded significantly over the past four decades. Whereas in 1977 these areas were separated by swaths of vacant and agricultural land, by 2010 the undeveloped land was, by and large, filled in.

FARGO-MOORHEAD POPULATION DENSITY BY DECADE

Using previously documented population and land use data, Table 15 depicts both the current and historical population density (persons per acre and square mile) of the jurisdictions within the urbanized area. Note that while it would appear that the density of the area has decreased over time, this is more due to both an increase of jurisdictional land area and the incorporation of additional cities into the urbanized area.

Table 15. Fargo-Moorhead Historical Urbanized Area Population and Density

Year	Population	Acres	Persons Per Acre	Persons Per Square Mile
1977	90,734	21,560	4.20	2,694
1986	110,431	29,092	3.79	2,429
1991	121,255	31,905	3.80	2,432
2010	173,468	54,386	3.68	2,041

Source: Metro COG, 2016

As a means of comparison, Table 16 depicts the density of the Fargo-Moorhead MSA to that of selected MSAs outside of the region. The selected cities include not only those with similar characteristics to Fargo-Moorhead, but also those which provide examples of different land use, development patterns, infrastructure opportunities/constraints, and growth strategies.

Table 16. Population and Densities of Selected Metropolitan Statistical Areas

Area	2015 Population	Acres	Persons Per Acre	Persons Per Square Mile
Bismarck, ND MSA	129,517	3,502,831	0.04	23.7
Minneapolis-St. Paul, MN MSA	3,524,583	5,196,600	0.68	434.1
Anchorage, AK MSA	399,790	17,081,397	0.02	15.0
Palm Bay-Melbourne, FL MSA	568,088	674,339	0.84	539.2
Rochester, MN MSA	213,873	1,603,897	0.13	85.3
Fargo-Moorhead MSA	**233,836**	**1,805,150**	**0.13**	**82.9**

Sources: Metro COG, 2016; U.S. Census Bureau 2015 Population Estimate

INCORPORATED ACREAGE BY JURISDICTION

As of 2015, the five-city urbanized area encompassed a total of 64,611 acres, or just over 100 square miles. As noted in previous sections of the Metro Profile, the Fargo-Moorhead Metropolitan Area has realized significant change since 2000 with respect to population, transportation, land use, and municipal boundary adjustments. Growth and development pressure is typically the impetus for boundary adjustments and annexations. Table 17 reports the acreage of the five cities within the urbanized area for 2000, 2004, 2008, 2014, and 2015. The data clearly show a pattern of significant land acquisition and expansion of municipal boundaries, with an increase of the incorporated limits amounting to nearly 68 percent in the last 15 years.

Table 17. Incorporated Acreage of the 5-City Urbanized Area, 2000-2014[5]

City	2000	2004	2008	2014	2015
Fargo	23,563	28,458	30,200	31,209	31,401
West Fargo	4,654	6,255	9,406	9,735	9,768
Moorhead	8,801	9,865	12,628	12,622	14,265
Dilworth	1,276	1,569	2,054	2,054	2,054
Horace	237	1,432	6,968	7,123	7,123
UZA Total	**38,531**	**47,578**	**61,256**	**62,744**	**64,611**

Source: Metro COG, 2016

[5] Acreage totals were derived from archived GIS data. Slight variations may exist in the calculated acreage from year to year, which may not indicate actual boundary modification.

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Roadway System

Every construction season, the roadway network in the Fargo-Moorhead Metropolitan Area undergoes change. The intent of this chapter is to document these annual network changes as well as certain data collection activities in order to:

- Monitor the Transportation Improvement Program (TIP) implementation;
- Provide a tracking mechanism for development purposes;
- Assess the accuracy of projections and assumptions made within the LRTP; and
- Provide a means to document data collection activities and dataset updates that are critical to Metro COG's transportation planning program.

Federal Functional Classification

The FHWA groups roadways into major classes according to the character of service they are intended to provide. In order to be eligible for federal transportation funding, a roadway must be identified as part of the Federal Functional Classification (FFC) road network. There are three basic highway classifications: Arterial, Collector and Local. In addition to these three classifications, several sub classifications exist, which allows a greater level of detail in describing the character and function of each roadway. All streets and highways are grouped into one of these classes depending on the character of the traffic and the degree of land access that they provide. Higher level facilities, such as interstate highways, have lower access, allowing for higher speeds and capabilities. Conversely, lower level facilities allow for greater access, but have reduced mobility due to lower speeds and capabilities. The relationship between roadway accessibility and mobility is illustrated in Figure 8. The general Federal Functional Classifications are described in more detail in Table 18.

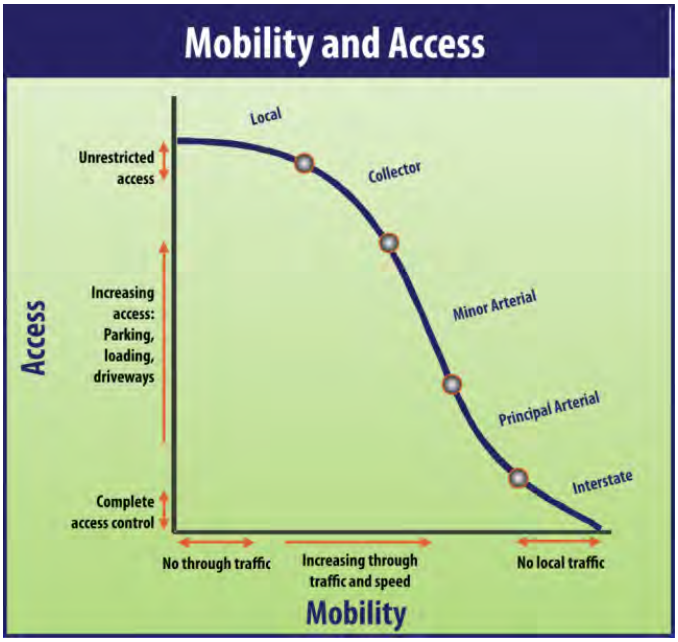
METROPOLITAN ROADWAY NETWORK

Roadways meeting certain categories under the functional classification system have access to federal transportation funds, which can be utilized for studies, network improvements, and construction. Local facilities, residential streets, and rural minor collectors (pursuant to CFR 470.103) are not eligible for federal transportation funding assistance. roadways. Table 19 delineates functional classification mileage by jurisdiction and overall percentages for the urban area and planning area. It is important to note that FHWA has established guidelines for the appropriate percentage of system mileage within each functional class category.

In 2015, Metro COG worked with both MnDOT and the FHWA in order to complete a comprehensive update to the FFC network for Clay County, Minnesota. This update introduced new recommended roadway types on to the local system, which were first outlined in a document published by the FHWA in 2013.[6] A map depicting the functional classification network for the area is shown in Figure 9.

In addition to the update of the Clay County FFC, in 2015 Metro COG also worked closely with local jurisdictions to update the Cass County FFC. This was the first major update to the Cass County network since 2006, and resulted in a significant revision of the system. This network was submitted to NDDOT for review in December of 2015 and will likely be finalized and receive FHWA approval in 2016.

Figure 8. Relationship between Mobility and Access on Roadways



Source: Federal Highway Administration

[6] For more information, please see "Highway Functional Classification Concepts, Criteria and Procedures." U.S. Department of Transportation, Federal Highway Administration, 2013. Publication number FHWA-PL-13-026.

Table 18. General Federal Functional Classifications

Functional System	Services Provided
Arterial	Provides the highest level of service at the greatest speed for the longest uninterrupted distance, with some degree of access control. Categories under the Arterial system include Principal Arterial-Interstate, Principal Arterial-Freeway/Expressway, Principal Arterial-Other, and Minor Arterial.
Collector	Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials. Categories under the Collector system include Major Collector and Minor Collector.
Local	Consists of all roads not defined as arterials or collectors; primarily provides access to areas with little or no through movement.

Table 19. Functional Classification Mileage by Jurisdiction

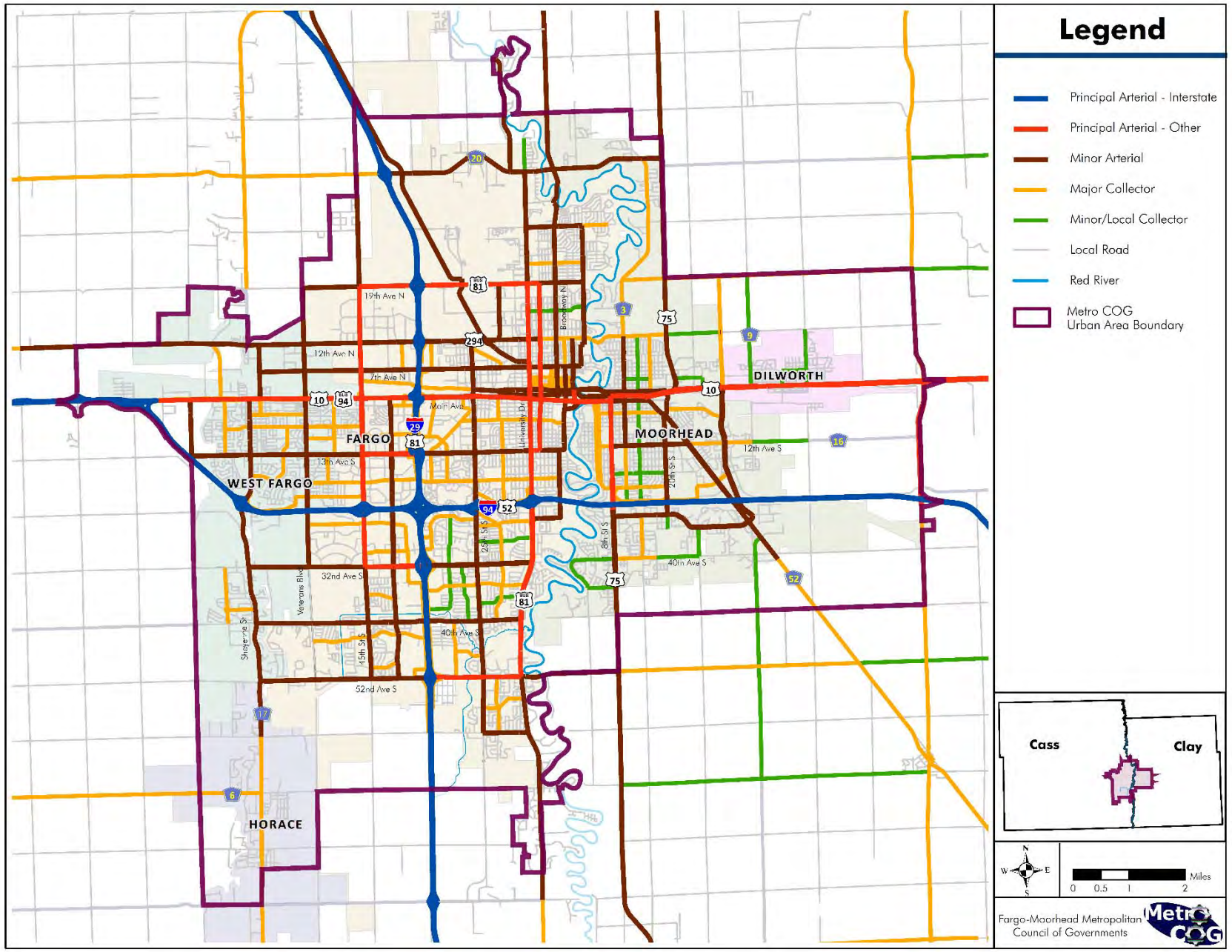
Jurisdiction	Functional Classification	Length	Percent of Network Length
Fargo	Collector	50.63	9%
	Minor Arterial	78.24	14%
	Principal Arterial	36.5	7%
	Interstate	45.98	8%
	Local	341.49	62%
	Total	**552.84**	**100%**
West Fargo	Collector	21.89	13%
	Minor Arterial	20.74	12%
	Principal Arterial	4.24	3%
	Interstate	7.21	4%
	Local	113.77	68%
	Total	**167.85**	**100%**
Moorhead	Major Collector	25.74	11%
	Minor Collector	10.75	5%
	Minor Arterial	33.82	14%
	Principal Arterial	6.73	3%
	Interstate	10.25	4%
	Local	149.52	63%
	Total	**236.82**	**100%**
Dilworth	Major Collector	1.15	3%
	Minor Collector	2.7	8%
	Minor Arterial	1.87	5%
	Principal Arterial	4.47	13%
	Interstate	0	0%
	Local	24.65	71%
	Total	**34.86**	**100%**
Horace	Collector	5.11	12%
	Minor Arterial	3.99	10%
	Principal Arterial	0	0%
	Interstate	0	0%
	Local	32.6	78%
	Total	**41.7**	**100%**
UZA Total	Collector	117.97	11%
	Minor Arterial	138.66	13%
	Principal Arterial	51.94	5%
	Interstate	63.44	6%
	Local	662.03	64%
	Total	**1034.07**	**100%**
Rural Cass County (within MPA)[7]	Collector	91.59	12%
	Minor Arterial	19.81	3%
	Principal Arterial	0	0%
	Interstate	56.96	8%
	Local	575.55	77%
	Total	**743.91**	**100%**
Rural Clay County (within MPA)[8]	Major Collector	133.05	10%
	Minor Collector	105.65	8%
	Minor Arterial	60.51	5%
	Principal Arterial	51.93	4%
	Interstate	43.88	3%
	Local	795.83	62%
	Total	**1288.35**	**100%**
MPA	Collector	448.26	`
	Minor Arterial	218.98	7%
	Principal Arterial	103.87	3%
	Interstate	164.28	5%
	Local	2033.41	66%
	Total	**3066.33**	**100%**

Source: Metro COG, 2016

[7] Includes all mileage within Cass County MPA that is not within Fargo, West Fargo, or Horace

[8] Includes all mileage within Clay County MPA that is not within Moorhead or Dilworth

Figure 9. Existing Functional Classification System



Source: Metro COG, 2016

Traffic Counts

METRO COG COUNTS

Metro COG collects 12 hour counts turning movement counts, peak turning movement counts and multi-day volume counts at the request of local jurisdictions to assist in various planning efforts. In addition, every five years Metro COG conducts a metro area-wide traffic count operation which collects 48-hour average daily traffic (ADT) counts and collects vehicle class counts at certain locations. The purpose of this count program is to help calibrate the Travel Demand Model as well as assist Metro COG and other agencies in planning efforts.

In 2015 Metro COG conducted the metro area-wide traffic counts which included ADT counts at 385 locations and vehicle class counts at 41 locations. These counts can be found on Metro COG's website (www.fmmetrocog.org -> Resources -> Maps and Data) or a paper map can be obtained from Metro COG.

NDDOT COUNTS

NDDOT routinely collects ADT and vehicle class count data across the state. Lately traffic data in the eastern region of the state (including Fargo/West Fargo) has been collected every two years. For information on these counts you can visit NDDOT's traffic count webpage at: http://www.dot.nd.gov/business/maps-portal.htm

MNDOT COUNTS

MnDOT also routinely collects traffic data across the state of Minnesota. Trunk highways are counted every two years while the local system roads are counted every four years. For the results of these counts you can visit MnDOT's traffic forecasting & analysis webpage at: http://www.dot.state.mn.us/traffic/data/

LOCAL JURISDICTION COUNTS

Local jurisdictions often coordinate counts with Metro COG. However, jurisdictions may collect vehicle data on their own. Additionally, some jurisdictions, such as the City of Fargo, have the capability of counting vehicles using their vehicle detection systems for signalized intersections. For information on local jurisdiction counts you may contact the jurisdiction or Metro COG.

AUTOMATIC TRAFFIC RECORDER (ATR) COUNTS

ATR stations are traffic volume detection systems that are permanently installed on selected interstate, state, county highways and urban roadways and provide continuous access to data. These ATR stations are equipped with loop detectors that allow the station to collect traffic volume data and, in certain circumstances, vehicle classification data. The NDDOT, and MnDOT currently operate ATR stations. For information on local jurisdiction counts you may contact the jurisdiction or Metro COG.

Table 20. 2016 Traffic Count Locations

Jurisdiction	Location	Type	Completed By:	Count Date
Moorhead	1st Ave S between Main Ave & 21st St	ADT Count	Metro COG	8/18/15 – 8/20/15
Fargo	Intersection of 3rd St & 1st Ave N	Turning movement count	Metro COG / ATAC	2/24/15, 2/26/15
Fargo	Intersection of Veterans Blvd & 26th Ave S	Turning movement count	Metro COG / ATAC	5/13/15
Fargo	Intersection of Broadway & 4th Ave N	Turning movement count	Metro COG / City of Fargo	8/19/15
Moorhead	5 Ave S & 11 St	Turning movement count	City of Moorhead	03/10/15
Moorhead	12 Ave S & 20 St	Turning movement count	City of Moorhead	03/11/15
Moorhead	12 Ave S & SE Main	Turning movement count	City of Moorhead	03/11/15
Moorhead	Center Ave & 7 St	Turning movement count	City of Moorhead	03/12/15
Moorhead	40 Ave S & 8 St (TH 75)	Turning movement count	City of Moorhead	03/31/15
Moorhead	Center Ave & 5 St	Turning movement count	City of Moorhead	04/01/15
Moorhead	Center Ave (TH 10) & 8 St (TH 75)	Turning movement count	City of Moorhead	04/02/15
Moorhead	Center Ave (TH 10) & 11 St	Turning movement count	City of Moorhead	04/02/15
Moorhead	14 Ave S & 19.5 St	Turning movement count	City of Moorhead	05/19/15
Moorhead	18 Ave S & 7 St	Turning movement count	City of Moorhead	05/19/15
Moorhead	18 Ave S & 18 St	Turning movement count	City of Moorhead	05/19/15
Moorhead	28 Ave S & 20 St	Turning movement count	City of Moorhead	05/19/15
Moorhead	1 Ave N & 3 St	Turning movement count	City of Moorhead	05/21/15
Moorhead	Main Ave & 4 St	Turning movement count	City of Moorhead	05/21/15
Moorhead	I-94 S Ramp & 20 St	Turning movement count	City of Moorhead	09/16/15
Moorhead	15 Ave N & 11 St	Turning movement count	City of Moorhead	11/10/15
Moorhead	15 Ave N & TH 75	Turning movement count	City of Moorhead	11/10/15
Moorhead	1 Ave N & 7 St	Turning movement count	City of Moorhead	11/17/15
Moorhead	1 Ave N & 8 St	Turning movement count	City of Moorhead	12/03/15
Moorhead	1 Ave N & 11 St	Turning movement count	City of Moorhead	12/03/15
Moorhead	1 Ave N & 14 St	Turning movement count	City of Moorhead	12/03/15
Moorhead	Center Ave & 4 St	Turning movement count	City of Moorhead	12/03/15
Moorhead	Center Ave (TH 10) & 14 St	Turning movement count	City of Moorhead	12/03/15

Source: Metro COG & City of Moorhead, 2016

2015 Roadway System Changes

Pursuant to initiatives set forth within Federal legislation, Metro COG annually tracks the efforts of local jurisdictions to improve and change the roadway network. Roadway system changes include: capacity changes/improvements; roadway reconstruction rehabilitation and maintenance projects; capacity changes; and other activities (e.g. corridor preservation, ROW acquisition). The information in Table 21, Table 22, and Table 23 reports and summarizes these annual system changes.

Table 21. 2015 Roadway Capacity and System Changes

Jurisdiction	Type / Network Characteristic	Description	Location
Fargo	Roadway Widening	Expanded roadway from 3 lanes to 6-lane divided roadway	32nd Ave S from Veteran's Blvd to 45th St
Fargo	Signal	New permanent signal	32nd Ave S at 51st St S
Fargo	New/Extended Roadway	Constructed new 2-lane roadway (31st St S) between 52nd Ave S and 64th Ave S	31st St S between 52nd Ave S and 64 Ave S
Fargo	New/Extended Roadway	New 2-lane connection	32nd St S between Timber Parkway and 45th Ave S
Fargo	New/Extended Roadway	New 2-lane roadway	63rd St from 52nd Ave S to Co Rd 17
Clay	Turn Lane	Two new turn lanes on CSAH 52 at CSAH 21	CSAH 52 at CSAH 21
Clay	Turn Lane	Two new turn lanes on CSAH 52 at Co Hwy 69	CSAH 52 at Co Hwy 69
Clay	Turn Lane	New northbound turn lane to CSAH 10	CSAH 52 at CSAH 10
Clay	Turn Lane	New southbound turn lane to Co Hwy 63	CSAH 52 at Co Hwy 63
Clay	Turn Lane	New southbound turn lane	CSAH 52 at 1st St S (Sabin)
Clay	Speed Change	Design speed change to 30 MPH on west shoulder of CSAH 52 from TH 9 956 feet NW	CSAH 52 at TH 9 for 956 feet
Clay	Speed Change	Design speed change to 50 MPH on west shoulder of CSAH 52 from 956 feet NW of TH 9 to 2,000 feet NW	CSAH 52 956 feet NW of TH 9 for 2,000 feet
Clay	Turn Lane	New westbound turn lane to TH 75	CSAH 18 at TH 75
Clay	Turn Lane	New eastbound turn lane to 34th St	CSAH 18 and 34th St
Clay	Turn Lane	New eastbound turn lane to CSAH 9	CSAH 18 and CSAH 9
Moorhead	New/Extended Roadway	New 2-lane roadway	44th Ave S from 16th St to 17th St
Moorhead	New/Extended Roadway	New 2-lane roadway	17th St from 44th Ave S to 45 Ave S
Moorhead	New/Extended Roadway	New 2-lane roadway	45th Ave S from 16th St to 17th St
Moorhead	New/Extended Roadway	New 2-lane roadway	20th St S from 34th Ave S to 43rd Ave S
Moorhead	Roadway Widening and Median Improvement	Expanded roadway from 2 lanes to 4-lane divided roadway with center turn lanes	8th St S (TH 75) from 40th Ave S to 46th Ave S
Moorhead	Signal	Traffic signal improvement	20th Ave S at SE Main Ave
West Fargo	Roadway Reconstruction/Turn Lane	Road reconstructed from 4-lane asphalt to divided concrete roadway with designated turn lanes	Main Ave from Drain 21 (11th St W) to I-94 Interchange
West Fargo	Roadway Reconstruction/Turn Lane	Road reconstructed from 2-lane asphalt to 4-lane divided concrete roadway with designated turn lanes	32nd Ave E from Veterans BLVD to Sheyenne St
West Fargo	Roadway Reconstruction	Road reconstructed from gravel road to asphalt 2-lane roadway	52nd Ave W from Sheyenne St to Horace Diversion
West Fargo	New/Extended Roadway	New partially divided roadway with designated turn lanes	23rd Ave E from 3rd St E to 6th St E
West Fargo	New/Extended Roadway	New 2-lane partially divided roadway with designated turn lanes	4th St E from 23rd Ave E to 26th Ave E
West Fargo	New/Extended Roadway	New 2-lane divided roadway with designated turn lanes	4th St E from 38th Ave E to 40th Ave E
West Fargo	Roadway Reconstruction/Realignment	½ mile of rural roadway realigned and reconstructed	CR 19 south of 12th Ave NW (CR 10)

Sources: City of Fargo; City of Moorhead; City of West Fargo; Clay County; Metro COG, 2016

Table 22. 2015 Obligated Roadway Projects

Jurisdiction	Location	Project Description	TIP Project No. / Local
Fargo	NP Avenue	Reconstruction of NP Avenue from University Drive to Broadway	412042
Fargo	13th Avenue South	Reconstruct 13th Avenue South between 38th and 44th Street	413035
Fargo	25th Street	AC full conversion of $2,000,000 to the City of Fargo for the 25th St S reconstruction and widening project in 2014	415000
Moorhead	TH 10 & TH 75	Geometric improvements at JCT. of 11th Street and Main Avenue/TH 75 and 11th Street from Center Avenue to Main Avenue, Reconstruct and signal work.	515010
Moorhead	TH 75	Extend Four (4) lane section on TH 75 beyond 46th Avenue South, including intersection improvements at 46th Avenue South. City initiated project on MnDOT Trunk Highway.	515046
Moorhead	SE Main Ave./12th Ave. S.	Intersection geometric improvements, traffic signal replacement and railroad crossing improvements	514045
West Fargo	12th Avenue North	12th Avenue North Reconstruction between CR 19 and 45th Street. Project falls under West Fargo, Fargo and Cass County boundaries.	315010
MnDOT	I-94	Install median cable guardrail on I-94 from TH 336 to Barnesville and 3 miles east of Alexandria to east Douglas County Line	8152602
NDDOT	Main Avenue	Main Avenue reconstruction from I-94 to Morrison Street in West Fargo	915010
NDDOT	I-29	Deck overlay and structural incidentals on I-29 bridge one mile south of I-94.	915030
NDDOT	ND Highway 18	0.1 Miles of PCC Pavement and Aggregate Base on ND Highway 18 in Casselton	915031
NDDOT	I-94	Roadside improvements. Embankmnet work at I-94/US-10 interchange.	915060
NDDOT	I-29	Christine Interchange north to Wild Rice River. Concrete Pavement Repair, Milling, Ramp improvements.	9152605
NDDOT	I-29 at 13th Ave S	Overhead sign re-installation and slide repair	9152619

Source: Metro COG. 2016

Table 23. 2015 Roadway Preservation/Transportation Systems Management Activities

Jurisdiction	Location	Project Description	TIP Project No. / Local
Clay County	CSAH 18	Concrete Paving 5.5 Miles of CSAH 18 from TH 75 to1 mile east of CSAH 11	215020
Clay County	CSAH 18	Subgrade repair and concrete paving of CSAH 18 from CSAH 3 to TH 75	215021
MnDOT	TH 75	AC Conversion for Mill and Overlay North of JCT of TH 10 to North Clay County Line	815020
MnDOT	MN-34	Pavement Rehabilitation from Jct TH 9 to Dunvilla	815030
MnDOT	I-94	East of Main Avenue in Moorhead. Weigh station modifications; concrete pavement and rehabilitation.	8152601
NDDOT	I-29	I-29 (SB) from Wild Rice River to 0.3 miles north of Main Avenue. Approach slabs, Concrete Pavement Repair, Grinding	914032
NDDOT	I-29	I-29 (NB) from Wild Rice River to 0.3 miles north of Main Avenue. Approach slabs, concrete pavement repair, grinding and structure painting	914033
NDDOT	I-29	PCC Pavement on I-29 Southbound from Argusville to Hunter	915050
Moorhead	11 St from 28th Ave N to 1st Ave N	Mill & Overlay and Signal Improvements	Local
Moorhead	11th Ave N from 7th St to 11 St	Mill & Overlay	Local
Moorhead	9th St N from 1 Ave N to 11 Ave N	Mill & Overlay	Local

Source: Metro COG , 2016

Trends in Vehicle Miles Traveled

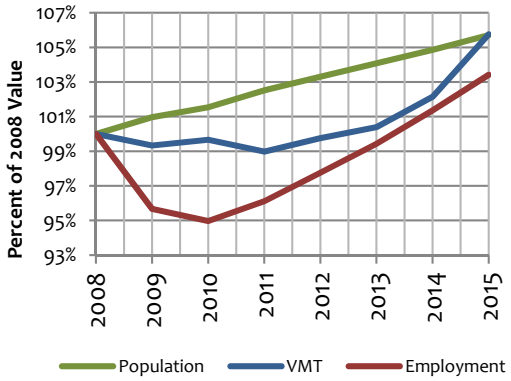
This section presents an overview of vehicle miles traveled (VMT) from both a national and metropolitan perspective, analyzing its relationship to population, employment, and fuel costs. VMT is often used (amongst a host of other mechanisms) not only to measure the relative demand on the transportation network, but also for calibration of the TDM. For the purposes of the Metro Profile, VMT is annualized and refers to the total number of miles traveled by all vehicles on an annual basis.

VMT, POPULATION, AND EMPLOYMENT

The total VMT began to flat-line nationally in 2005 and 2006, and declined in 2008, concurrent with the national recession. VMT has since rebounded to a degree, but with only moderate growth from 2009 to 2013. However, VMT has increased comparatively sharply since 2013, in particular over the course of 2015. Further, VMT per capita realized steady increases over the past several decades and has only recently seen a rather significant decline. Research and reports at the national level suggest and hypothesize that even though VMT growth has steadied, with moderate growth forecasted for the near future, there may continue to be a decline in transportation system performance due to the fact that the system is near capacity and thus susceptible to level of service issues with only minimal increases in demand. Figure 10 and Figure 11 (at right) illustrate changes in VMT, population, and employment from 2008 to 2015 as a percentage of 2008 figures for both the Fargo-Moorhead Metropolitan Area and the United States.

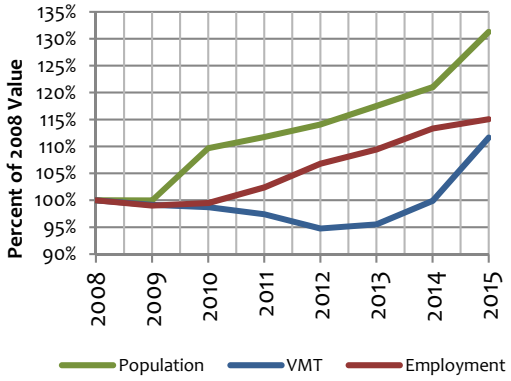
In regards to national trends, while population has increased at a steady pace, VMT has not increased proportionally. Indeed, VMT dipped slightly from 2010 to 2011 before increasing at a steady pace (though at a rate lower that the increase in population) until 2013. 2015 saw a sharp increase in VMT. Employment, on the other hand, decreased sharply between 2008 and 2011, a result of the significant recession seen in the country during that time. The number of jobs has increased since 2011, and now eclipses pre-2008 national levels. While employment and population continue to increase, 8-year data trends show that gross VMT has not risen to the same degree. However, data for 2015 suggest that VMT may be closely tied to gas prices at the national level. This is evident by examining the sharp decrease in gas prices towards the end of 2014 and throughout 2015, which coincided with a spike in national VMT. cf

Figure 10. National Vehicle Miles Traveled, Population, and Employment Trends, Percent Change from 2008



Sources: FHWA Highway Statistics Series, 2008 – 2015; U.S. Census Bureau, 2008 – 2015; U.S. Bureau of Labor Statistics, 2008-2015

Figure 11. Local Vehicle Miles Traveled, Population, and Employment Trends, Percent Change from 2008



Sources: FHWA Highway Statistics Series, 2008 – 2015; U.S. Census Bureau, 2008 – 2015; U.S. Bureau of Labor Statistics, 2008-2015

Local trends in population, employment, and VMT differ significantly from the national trends. While the nation experienced one of the largest recessions in modern times from 2008 to 2011, the Fargo-Moorhead MSA was comparatively unaffected. Employment remained flat (but did not notably decline) from 2008 to 2010 before rapidly increasing from 2010 to present. Population spiked after 2009 at a rate closely mirroring employment trends. VMT on the other hand decreased from 2008 to 2013. Over the past 2 years, however, VMT has rebounded. In 2015 VMT rose dramatically in the Fargo-Moorhead urban area, perhaps a reflection of the significant decline in gas prices which occurred during the year.

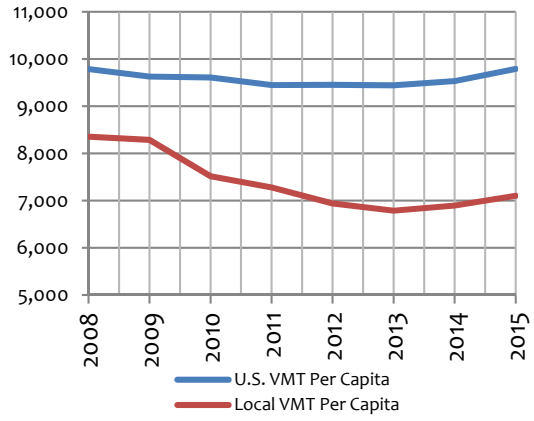
VMT PER CAPITA

VMT per capita – that is, the number vehicle miles traveled per person – is a statistical tool that can shed light on travel patterns, the amount and length of trips people are undertaking, and the use of personal automobiles versus public transit and alternative modes of transportation.

National data suggests that between 2008 and 2013 VMT per capita declined slightly, with the largest drop during the midst of the recession. After the end of the recession in 2011 until 2013, VMT per capita has remained at nearly the same level in spite of economic growth and greater employment opportunities. Since 2013, VMT per capita has rebounded, with 2015 showing a substantial increase VMT per capita at the national level.

Locally, VMT per capita has declined at a greater rate than nationally, dropping nearly 2,000 per year between 2008 and 2013 (see Figure 12). This is in spite of strong economic and job growth within the metro area. These numbers indicate that there has been a significant shift since 2008 in how people travel and the amount and length of trips undertaken, all of which are seemingly un-tied to economic and job growth. In fact, in this example, an area with a strong economy (Fargo-Moorhead MSA) experienced a much more pronounced decline in VMT per capita than what occurred nationally. Since 2013, VMT per capita in the urban area has increased, mirroring national trends and likely a product of lower gas prices as compared to previous years.

Figure 12. National and Local VMT Per Capita, 2008-2015



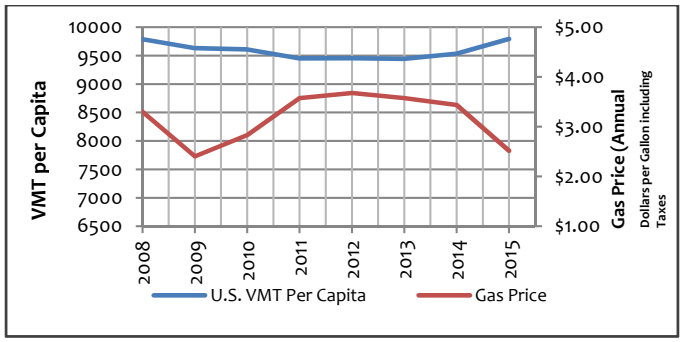
Sources: FHWA Highway Statistics Series, 2008 – 2015; U.S. Census Bureau, 2008 – 2015

VMT PER CAPITA AND FUEL PRICES

VMT is a product of a number of socio-economic, demographic, economic, market, and community variables, which are continually changing and evolving. Some of the factors influencing VMT at both national and local scales include: population and age distribution; household size and composition; vehicle availability; household income; travel time/trip length; land use patterns; and personal decision making. In addition to these factors, one variable which typically trends with VMT is the cost of fuel. Figure 13 and Figure 14 illustrate associations between VMT per capita and fuel prices at both the national and local levels.

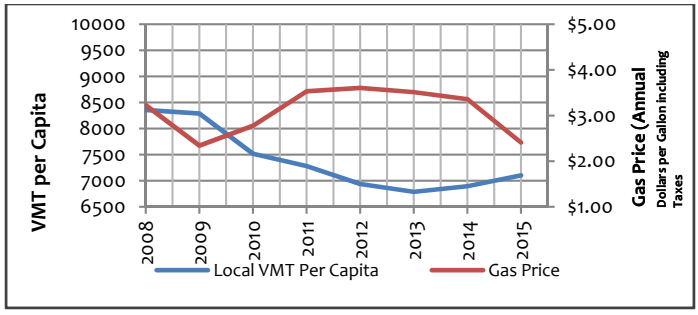
Generally speaking, as gas prices increase, the total VMT in any given area begins to decrease. This relationship is illustrated on both national and local scales, with the latter in particular showing a direct correlation. Contrary to trends over the previous years, VMT per capita grew significantly in 2015, simultaneous to a dramatic drop in fuel prices.

Figure 13. National VMT Per Capita and Annual Fuel Prices, 2008-2015



Sources: FHWA Highway Statistics Series, 2008–2015; U.S. Census Bureau, 2008–2015; U.S. Energy Information Administration, 2008-2015

Figure 14. Local VMT Per Capita and Annual Fuel Prices, 2008-2014



Sources: FHWA Highway Statistics Series, 2008–2015; U.S. Census Bureau, 2008–2015; U.S. Energy Information Administration, 2008-2015

VMT BY FEDERAL FUNCTIONAL CLASSIFICATION

Table 24 details VMT by Federal Functional Classification (FFC) over the last five years for Fargo, West Fargo, and the Clay County urban area. Note that these were the only jurisdictions in which VMT by FFC were reported upon. Of interest is the increase of total VMT in reporting jurisdictions over the past 2 years, which has risen more sharply than in preceding years. Overall, the proportion of VMT in each FFC has remained relatively static since 2010.

Table 24. 2011-2015 Vehicle Miles Traveled and Rate of Change, by Functional Classification[9]

Year	Jurisdiction	Principal Arterial, Interstate	Principal Arterial, Other	Minor Arterial	Collector	Local Roadway	Total	% Principal Arterial (Interstate)	% Principal Arterial (other) and Minor Arterial	% Collector	% Local
2011	Fargo	223,590,000	152,692,000	189,994,000	67,735,000	150,415,000	784,426,000	28.50%	43.69%	8.63%	19.18%
	West Fargo	42,466,000	17,474,000	43,297,000	14,669,000	22,730,000	140,636,000	30.20%	43.21%	10.43%	16.16%
	Clay County Urban Area	54,367,845	59,797,585	69,688,355	19,891,405	43,128,400	246,873,590	22.02%	52.45%	8.05%	17.48%
	Total Reported 2011 VMT	320,423,845	229,963,585	302,979,355	102,295,405	216,273,400	1,171,935,590	27.34%	45.48%	8.73%	18.45%
2012	Fargo	225,562,000	152,257,000	187,357,000	66,950,000	151,321,000	783,447,000	28.79%	43.35%	8.55%	19.31%
	West Fargo	43,659,000	17,474,000	43,472,000	14,555,000	22,847,000	142,007,000	30.74%	42.93%	10.25%	16.08%
	Clay County Urban Area	55,007,238	60,476,376	72,251,328	19,945,902	43,246,560	250,927,404	21.92%	52.89%	7.95%	17.23%
	Total Reported 2012 VMT	324,228,238	230,207,376	303,080,328	101,450,902	217,414,560	1,176,381,404	27.56%	45.33%	8.62%	18.48%
2013	Fargo	233,463,000	160,587,000	195,778,000	66,338,000	155,848,000	812,013,000	28.75%	43.89%	8.17%	19.19%
	West Fargo	45,633,000	19,151,000	51,440,000	15,541,000	23,531,000	155,296,000	29.38%	45.46%	10.01%	15.15%
	Clay County Urban Area	54,856,945	60,093,600	77,584,035	20,447,300	43,383,900	256,365,780	21.40%	53.70%	7.98%	16.92%
	Total Reported 2013 VMT	333,952,945	239,831,600	324,802,035	102,326,300	222,762,900	1,223,674,780	27.29%	46.14%	8.36%	18.20%
2014	Fargo	239,319,000	160,919,000	197,525,000	66,467,000	160,544,000	824,775,000	29.02%	43.46%	8.06%	19.47%
	West Fargo	47,248,000	19,170,000	51,946,000	15,800,000	24,237,000	158,398,000	29.83%	44.90%	9.97%	15.30%
	Clay County Urban Area	84,109,741	69,885,845	79,241,864	26,159,340	44,053,814	303,450,604	27.72%	49.14%	8.62%	14.52%
	Total Reported 2014 VMT	370,676,741	249,974,845	328,712,864	108,426,340	228,834,814	1,286,623,604	28.81%	44.98%	8.43%	17.79%
2015	Fargo	258,455,000	174,888,000	212,867,000	71,717,000	224,053,000	941,980,000	27.44%	41.16%	7.61%	23.79%
	West Fargo	37,089,000	18,452,000	60,789,000	15,717,000	24,820,000	156,867,000	23.64%	50.51%	10.02%	15.82%
	Clay County Urban Area[10]	86,633,033	71,982,420	81,619,120	26,944,120	45,375,428	312,554,122	27.72%	49.14%	8.62%	14.52%
	Total Reported 2015 VMT	382,177,033	265,322,420	355,275,120	114,378,120	294,248,428	1,411,401,122	27.08%	43.97%	8.10%	20.85%

Sources: 2011-2015 NDDOT Annual Traffic Reports, MnDOT Traffic Information System Database

[9] Figures for the Clay County Urban Area include all incorporated jurisdictions within Clay County, which differs from the Metro COG definition for urban area.

[10] 2015 Clay County VMT was not available at the time of this publication. Per MnDOT guidance, a 3% growth was applied to 2014 VMT totals.

Intelligent Transportation System (ITS):

Metro COG maintains an Intelligent Transportation System (ITS) plan for the MSA and works in cooperation with the Advance Traffic Analysis Center (ATAC) on the maintenance of the Regional ITS Architecture. The ITS Deployment Strategy and Regional ITS Architecture were both updated and adopted by Metro COG in December 2014. The primary recommendations of the ITS Deployment Strategy and Regional Architecture focus on interoperability and regionalization of existing and future ITS deployments and place a high priority on the centralization and integration of signal systems within the MSA.

The Regional ITS Architecture provides guidance for developing and implementing ITS systems through Systems Engineering Analysis and information flows between entities. With inputs from the Regional ITS Architecture, the 2014 ITS Deployment Strategy was developed to further plan for ITS implementation through identification of deployment strategies and initiatives. These strategies and initiatives focus on the following priority areas:

(a) closed circuit television cameras (CCTV);
(b) traffic signal systems integration; and
(c) development of a Traffic Operations Center (TOC) to coordinate traffic management, traveler information, maintenance, management, and data collection.

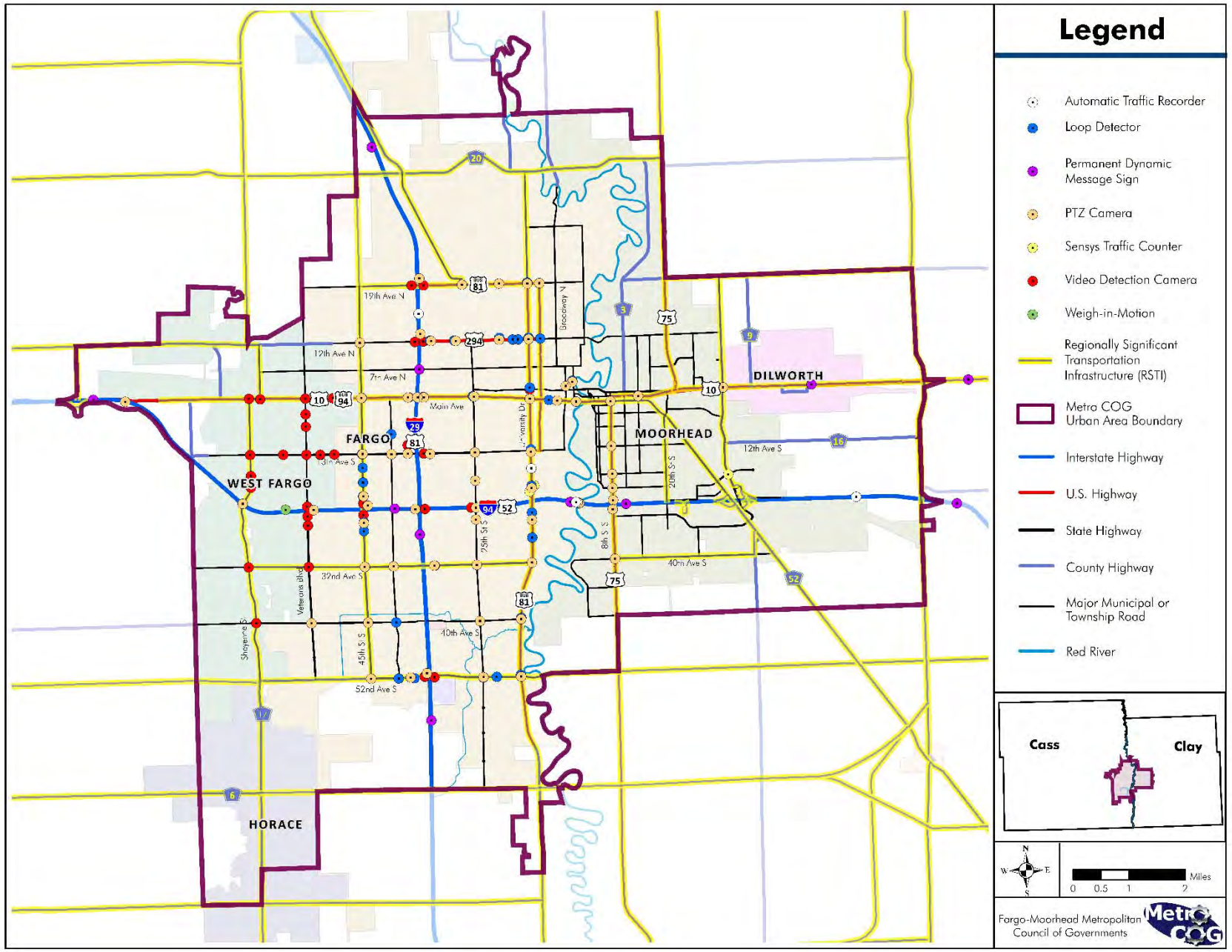
Also adopted in December 2014 was the Concept of Operations Report for a Fargo-Moorhead TOC. This report details steps necessary to implement a traffic operations center for the Fargo-Moorhead area.

In March 2011, Metro COG finalized and adopted the Traffic Operations Incident Management Strategy (TOIMS) to establish a list of improvements to enhance the movement of people and goods in the event of an incident or emergency. Major components of the study include discussion and analysis on identification of a Regionally Significant Transportation Infrastructure (RSTI) network, beltway concepts, and ITS deployment.

These plans are overseen by the Traffic Operations Working Group (TOWG). The TOWG is comprised of traffic experts from Metro COG, local jurisdictions, NDDOT, MnDOT, and ATAC. The TOWG meets regularly to discuss traffic operations issues, oversee the ITS Deployment Strategy and Regional Architecture, and for other ITS issues concerning the metro area.

Figure 15 identifies current ITS deployments within the metropolitan transportation network, including: dynamic vehicle detectors, vehicle detector systems, cameras, dynamic message signs, traffic cameras, and weigh-in-motion stations. Also in Figure 15 is the Regionally Significant Transportation Infrastructure (RSTI), which are corridors that are significant to the safety and security of the region by serving as evacuation corridors during emergency events. It is essential to carefully identify and preserve these critical corridors.

Figure 15. Intelligent Transportation System (ITS) Deployments



Source: Metro COG, 2016

Freight & Interstate Travel

This chapter of the Profile outlines information related to airline passenger and cargo activities, passenger rail (Amtrak) travel, and freight movement within the Fargo-Moorhead Metropolitan Area. Airline and passenger rail systems are essential components of a multi-modal transportation system, and are increasingly utilized as travel options by members of the Fargo-Moorhead community. The region is also increasing in prominence as a regional freight hub, and serves as a center for freight activity for both western Minnesota and eastern North Dakota.

Aviation

While there are five airports within the Fargo-Moorhead MSA, only Hector International Airport provides scheduled commercial service. In addition to passenger service, Hector is also the primary hub for air-based freight and mail activity within the region. Four commercial passenger lines and five cargo carriers provide the majority of service to Hector International Airport. There are approximately 25 to 30 aircraft landings each day or 9,000 to 11,000 per year. Hector International Airport is also a site for international customs inspections.

COMMERCIAL PASSENGER ACTIVITY

There were 858,982 combined boardings and deboardings in 2015, representing a slight decline from 2014 totals. Most of this decline is likely due to the withdrawal of service provided by Frontier Airlines, who ceased service to Hector International Airport in April of 2015. Table 25 documents commercial passenger activity by carrier for 2015. Table 26 summarizes annual passenger activity and annual change over the past five years. Figure 16 depicts the 11 scheduled non-stop routes to and from Fargo.

Table 25. 2015 Commercial Passenger Activity at Hector International Airport, by Airline

Airline	Enplanements	Deplanements	Total
Delta Airlines	191,255	191,154	382,409
United Express	102,772	103,027	205,799
Allegiant Air	72,739	73,046	145,785
American Eagle	56,293	56,062	112,355
Frontier Airlines[11]	6,192	6,442	12,634
Total	**429,251**	**429,731**	**858,982**

Source: Fargo Municipal Airport Authority, 2016

Table 26. Total Passenger Activity and Annual Rate of Change at Hector International Airport, 2011-2015

Year	Enplanements	Deplanements	Total	Percent Change
2011	350,458	349,091	699,549	--
2012	364,727	364,702	728,799	**4.2%**
2013	398,677	398,448	797,125	**9.4%**
2014	448,844	445,578	894,426	**12.2%**
2015	429,251	429,731	858,982	**-4.4%**

Source: Fargo Municipal Airport Authority, 2011-2015

Figure 16. Hector International Airport Non-Stop Routes

Source: Fargo Municipal Airport Authority, 2015

[11] Frontier Airlines ceased service to Hector International Airport in April of 2015.

AVIATION PERFORMANCE

Table 27 depicts on-time performance and causes of delay for 2011-2015 at Hector International Airport. In 2015, aviation performance improved by approximately 11 percent over the previous year. This increase in aviation performance is primarily influenced by national system trends, which are the most significant factor affecting performance at Hector International Airport. Overall, there were fewer cancelled flights, national system delays, and air carrier delays in 2015 than in prior years.

INTERNATIONAL CUSTOMS ACTIVITY

Hector International Airport is designated as a 'Port of Entry,' meaning a customs officer is present and authorized to accept entries of merchandise and duties, and to enforce various provisions, customs, and navigation laws (19 CFR 101.1). For additional information relating to transactions, inspections, and other customs activities conducted at the Hector International Airport, visit the U.S. Customs and Border Protection website at www.cbp.gov.

Table 27. On-Time Performance at Hector International Airport, 2011-2015

Year	Air Carrier Delay	Weather Delay	National Aviation System Delay	Security Delay	Late Arriving Aircraft	Cancelled	Diverted	On-time Performance
2011	6.43%	0.85%	4.22%	0.05%	7.27%	2.65%	0.20%	**78.34%**
2012	5.84%	0.76%	4.23%	0.00%	6.55%	1.64%	0.25%	**80.73%**
2013	7.46%	1.24%	6.69%	0.00%	8.30%	2.99%	0.19%	**73.13%**
2014	9.01%	1.07%	7.91%	0.03%	9.54%	4.15%	0.17%	**68.11%**
2015	6.03%	1.08%	4.75%	0.01%	6.54%	1.56%	0.18%	**79.85%**

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, 2016

Passenger Rail (Amtrak)

Amtrak provides daily passenger rail service to the Fargo-Moorhead Metropolitan Area with one long distance train as part of the 'Empire Builder' line, which continues to be one of the most productive of all existing Amtrak lines. The Empire Builder line runs from Chicago to the Pacific Northwest with one eastbound and one westbound train passing through the Fargo station daily. Additionally, Amtrak provides express services for packages and carries mail to certain locations. Table 28 provides ridership data for the Fargo Amtrak station since 2011. After the Empire Builder line, the next closest to the region is the 'California Zephyr' line, which runs from Chicago to Omaha to Denver and then on to Utah and California.

Flooding in the Red River Valley affected ridership in 2010 and played a major role in the significant ridership decrease in 2011, as service west of St. Paul was significantly impacted due to flooding in Minot. Since the flooding, however, ridership has rebounded and has since eclipsed the pre-flood totals of 2010. Overall, since 2000, boardings have increased by approximately 45 percent in the metro area.

Table 28. Amtrak Ridership and Annual Change, Fargo Station

Year	Ridership	Percent Change
2011	16,968	-
2012	20,304	19.66%
2013	22,497	10.80%
2014	23,314	3.63%
2015	22,829	-2.08%

Source: National Association of Railroad Passengers, 2016

Table 29 shows the annual ridership and percent change of all North Dakota Amtrak stations. After a significant decline in 2011 (again in large part due to flooding), total ridership exploded in 2012, increasing by over 41 percent. In 2015, total ridership in North Dakota fell approximately 9 percent, continuing the trend from 2012. This decline in ridership can be attributed somewhat to the decline in ridership for the Empire Builder service as a whole, which saw a drop of approximately 100,000 riders since 2012.

The statewide ridership numbers also reflect a significant decline in the number of workers migrating from outside of the state to the Bakken region in western North Dakota. In 2012/2013, at the height of the activity within the Bakken region, ridership totals to Minot, Stanley, and Williston totaled over 100,000 passengers per year. As of 2015, the total passenger activity to these three stations had declined to approximately 76,000. The reduced ridership to these three stations accounts for the vast majority of the total decline in ridership state-wide.

Table 29. Total Amtrak Ridership and Annual Change, All North Dakota Stations

Year	Ridership	Percent Change
2011	108,900	-
2012	153,700	41.14%
2013	153,500	-0.13%
2014	130,800	-14.79%
2015	119,500	-8.64%

Source: National Association of Railroad Passengers, 2016

Freight

In 2007, Metro COG completed the Fargo-Moorhead Freight Assessment, which provided a framework to facilitate and establish a regional freight-planning program as a subset to the metropolitan transportation planning program. Additionally, in 2016 Metro COG will begin a consultant-led Regional Freight Plan, which will examine factors affecting freight movement through and within the region. This plan, which is expected to be completed in 2017, will inform both long and short range planning efforts.

The movement and distribution of freight has significant links to the metropolitan transportation network's efficiency and functionality. The Fargo-Moorhead Metropolitan Area functions as a regional economic center for eastern North Dakota and western Minnesota, accommodating numerous big-box retail businesses, a regional shopping center, and a large quantity of restaurants and supporting businesses. The regional transportation network is a vital component in the support of economic development and freight movement. The following analyses use figures and estimates from the states of Minnesota and North Dakota. These figures provide insight into not only the quantity of goods arriving, departing, and moving within the region, but also the modes on which they arrive, both presently and in the future.

REGIONAL FREIGHT MOVEMENT AND DISTRIBUTION

Freight in the Fargo-Moorhead Area arrives, departs and is distributed locally via truck, rail, air, or other modes. According to data from the most recent version of the FHWA freight analysis framework (version 4.1), in 2015 over $475 billion in domestic freight was moved within, from and to Minnesota and over $157 billion in North Dakota. The value of this freight is expected increase significantly by 2045 ($713 billion in MN, $192 billion in ND). The 2015 total domestic tonnage of shipments travelling within, from, or to was over 626,000,000 tons in Minnesota and 289,000,000 tons in North Dakota. It is projected that this will increase to over 783,000,000 tons in Minnesota and over 324,000,000 tons in North Dakota by 2045.

While rail and air contribute significantly to the movement of freight, most domestic freight movement is transported via truck. In Minnesota over 95 percent of domestic freight within the state is transported by truck, a figure which is expected to hold steady to 2045. The proportion of domestic freight transported via truck is lower in North Dakota, where trucks account for nearly 80 percent of all domestic freight moved within the state. By 2045, this figure is expected to increase to 85 percent for North Dakota.

The FHWA estimates that in 2015, 35 percent of domestic freight shipped from Minnesota was done via truck while 31 percent was shipped by rail. This is expected to change by 2045, with over 41 percent of domestic freight shipments within the state made by truck and 27 percent by rail. A majority of domestic freight shipments leaving North Dakota are done by rail (34 percent) and by pipeline (57 percent). These trends are expected to hold steady over the next 30 years.

Shipments of domestic freight into both states are dominated by truck, with over 41 percent of movements in Minnesota and 43 percent in North Dakota. Domestic freight shipped into each state via pipeline is the next largest shipment mode, accounting for 33 percent in Minnesota and 38 percent in North Dakota. The mode split by 2045 for domestic freight shipped into North Dakota is anticipated to increasingly shift towards pipeline activity, while in Minnesota truck shipments are anticipated to increase. Table 30 on the following page summarizes current and projected shipments of freight within, from, and to Minnesota and North Dakota.

Table 30. Freight Movement Within, From, and To Minnesota and North Dakota -- Percent of Tonnage by Mode for 2015 and 2045

State	Trade	Mode	Within		From		To	
			2015	2045	2015	2045	2015	2045
MN	Domestic	Truck	95.78%	96.19%	35.43%	41.25%	41.08%	49.46%
		Rail	4.02%	3.56%	31.67%	27.41%	18.30%	13.77%
		Water	0.00%	0.00%	4.39%	4.07%	5.11%	6.09%
		Air (include truck-air)	0.00%	0.00%	0.02%	0.03%	0.02%	0.02%
		Multiple Modes & Mail	0.13%	0.17%	9.41%	8.48%	2.53%	3.13%
		Pipeline	0.08%	0.08%	19.08%	18.75%	32.97%	27.52%
		Other and Unknown	--	--	---	--	--	--
		Total Domestic	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	Imports	Truck	0.91%	1.38%	2.35%	2.46%	24.58%	31.82%
		Rail	3.69%	5.20%	80.34%	85.90%	34.64%	31.47%
		Air (include truck-air)	0.00%	0.00%	0.03%	0.05%	0.30%	0.46%
		Multiple Modes & Mail	0.02%	0.03%	0.90%	2.13%	4.93%	7.17%
		No Domestic Mode	58.00%	43.99%	0.00%	0.00%	0.00%	0.00%
		Pipeline	37.30%	49.20%	13.90%	7.97%	0.20%	0.10%
		Water	0.00%	0.00%	2.42%	1.39%	35.33%	28.94%
		Other and Unknown	0.08%	0.19%	0.06%	0.11%	0.03%	0.04%
		Total Imported	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	Exports	Truck	6.01%	8.56%	26.37%	36.60%	3.28%	4.43%
		Rail	62.03%	55.16%	16.73%	15.83%	93.05%	90.92%
		Water	0.00%	0.00%	50.41%	38.24%	0.00%	0.00%
		Air (include truck-air)	0.01%	0.02%	0.84%	1.70%	0.14%	0.35%
		Multiple Modes & Mail	2.09%	2.69%	5.63%	7.60%	3.52%	4.30%
		Pipeline	29.68%	33.39%	0.00%	0.00%	0.00%	0.00%
		Other and Unknown	0.18%	0.18%	0.02%	0.02%	0.00%	0.01%
		Total Exported	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

State	Trade	Mode	Within		From		To	
			2015	2045	2015	2045	2015	2045
ND	Domestic	Truck	79.76%	85.79%	7.26%	10.07%	43.48%	38.16%
		Rail	2.22%	1.63%	33.48%	30.84%	16.50%	12.24%
		Air (include truck-air)	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
		Multiple Modes & Mail	0.03%	0.04%	1.12%	1.37%	1.82%	1.81%
		Pipeline	7.83%	7.84%	56.67%	56.89%	38.18%	47.78%
		Other and Unknown	10.16%	4.70%	1.47%	0.83%	0.00%	0.00%
		Total Domestic	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	Imports	Truck	13.55%	17.67%	11.20%	15.95%	48.59%	48.56%
		Rail	15.35%	16.40%	40.31%	51.80%	32.26%	28.21%
		Air (include truck-air)	0.00%	0.00%	0.00%	0.00%	0.74%	1.02%
		Multiple Modes & Mail	0.25%	0.27%	0.24%	0.37%	1.63%	2.05%
		Pipeline	70.82%	65.61%	48.03%	31.70%	0.00%	0.00%
		Water	0.00%	0.00%	0.19%	0.12%	16.69%	20.03%
		Other and Unknown	0.03%	0.05%	0.03%	0.06%	0.09%	0.13%
		No Domestic Mode	--	--	--	--	--	--
		Total Imported	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	Exports	Truck	50.18%	48.87%	24.69%	22.36%	55.89%	64.85%
		Rail	49.67%	50.64%	52.10%	51.56%	41.24%	32.17%
		Water	0.00%	0.00%	19.30%	21.63%	0.00%	0.00%
		Air (include truck-air)	0.04%	0.11%	0.08%	0.14%	0.04%	0.05%
		Multiple Modes & Mail	0.11%	0.38%	3.81%	4.27%	2.77%	2.87%
		Pipeline	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		Other and Unknown	0.00%	0.00%	0.03%	0.03%	0.04%	0.06%
		Total Exported	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: FHWA Freight Analysis Framework, 2016

LOCAL FREIGHT MOVEMENT BY TRUCK

According to data published in the Freight Analysis Framework (FAF), in 2007 over 1.6 million kilotons of freight were moved by truck on the FAF network. It is projected that over 5.8 million kilotons of freight will be moved by truck through the region by 2040. Figure 17 on the following page identifies the tonnage shipped by truck in 2007 on the FAF network through the Fargo-Moorhead metropolitan area. Figure 18 (located on page 47) depicts the area projections for 2040. Note that the symbols representing tonnage in 2040, though identical to those in the 2007 map, depict dramatically higher values. In the case of the highest value, depicted as red on the map, the quantity symbolized increases from 25,000 in 2007 to 75,000 in 2040.

More current FAF network data was not available from the FHWA at the time of this publication. It is expected to be released later in 2016, and figures and maps will be updated in the 2017 Metro Profile.

LOCAL FREIGHT GENERATORS

On a five-year timeframe Metro COG purchases employment data for use in the calibration of the TDM. This data will be purchased in 2016 and used in the development of the TDM that will inform the 2045 LRTP. This data, in combination with freight industry consultation and input from Metro COG's Transportation Technical Committee, provides the framework for development of the freight generator database. Figure 19 on page 48 depicts the 2010 freight generators in the UZA, both as a specific point-based location and a wider area. A freight generator 'area' is identified as aggregated parcels with significant industrial development pursuant to Metro COG's existing land use database. Site specific freight generators are based on available employment data and are current as of 2010.

FREIGHT AND MAIL

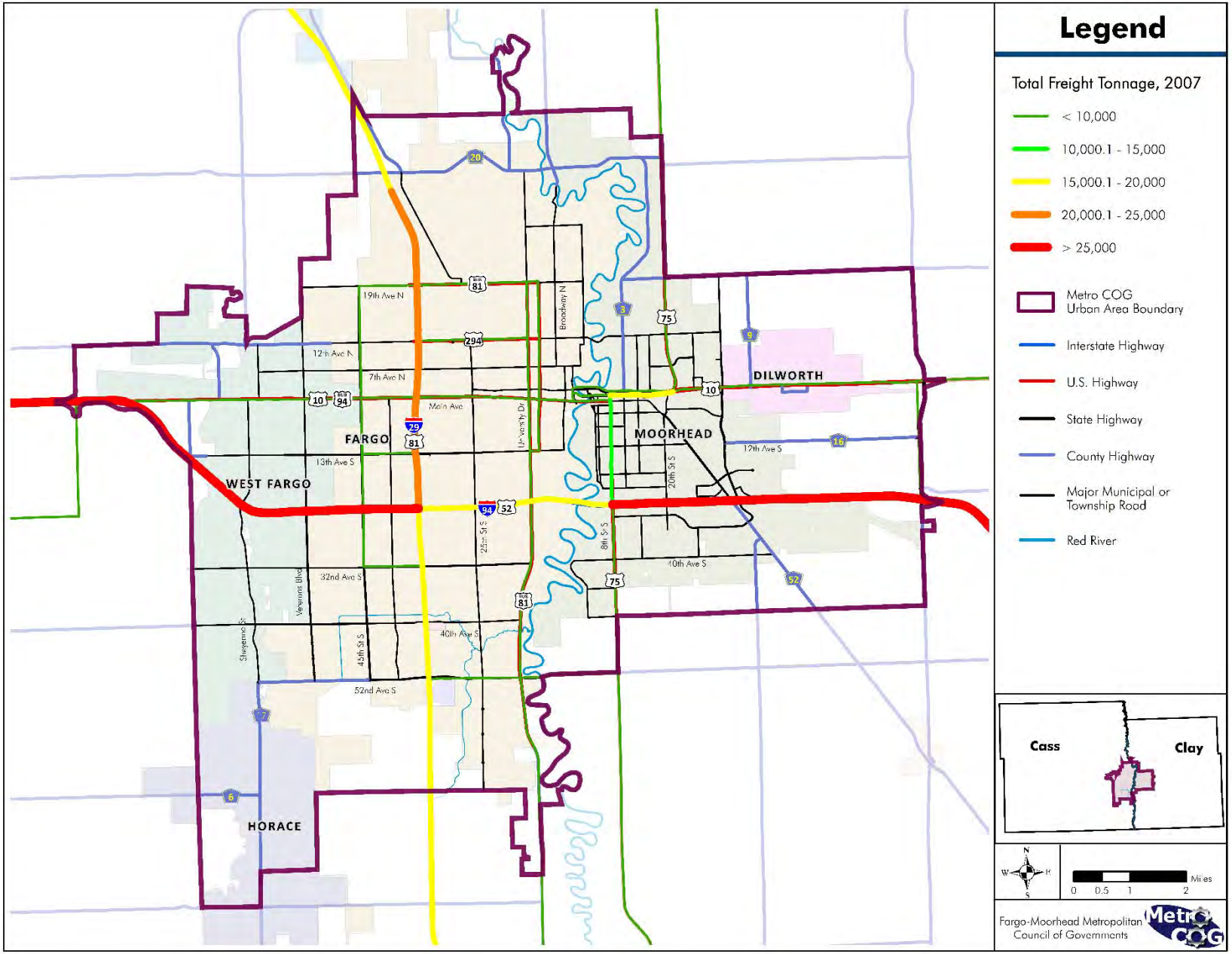
The movement of freight and mail by aviation is critical to local commerce and market dynamics within a region. Table 31 displays the 2015 total landed weight for the freight and mail air carriers that serve the Fargo-Moorhead MSA.

Table 31. Total 2015 Cargo Landed Weight at Hector International Airport, by Airline

Airline	Total Landed Weight (in lbs)
Alpine Air	8,408,700
Corporate Air	391,000
Encore Air Cargo	2,176,800
Northern Air Cargo	114,000
Paccair	37,500
Perimeter	1,548,200
Total	**12,676,200**

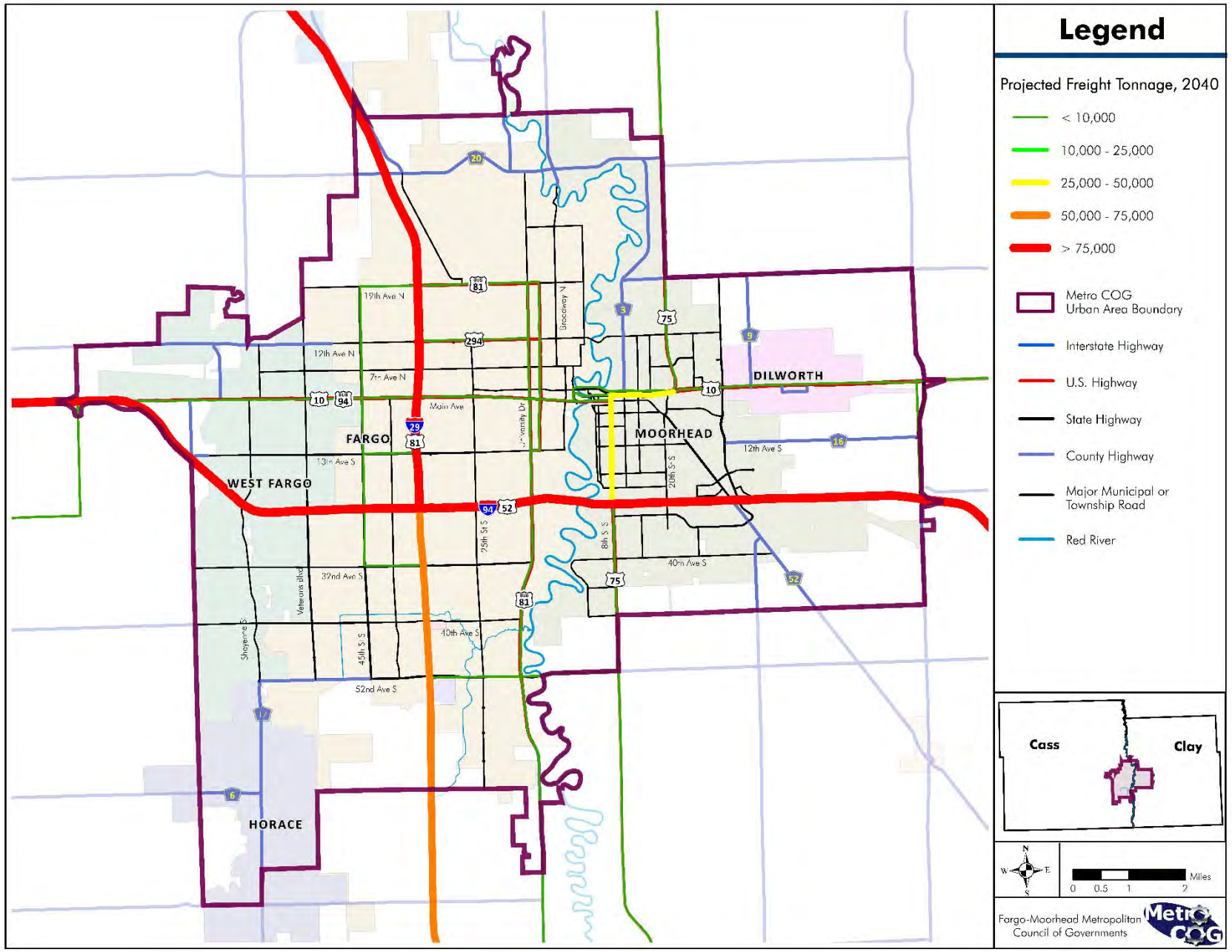
Source: Fargo Municipal Airport Authority, 2016

Figure 17. 2007 Freight Tonnage in the Fargo-Moorhead UZA



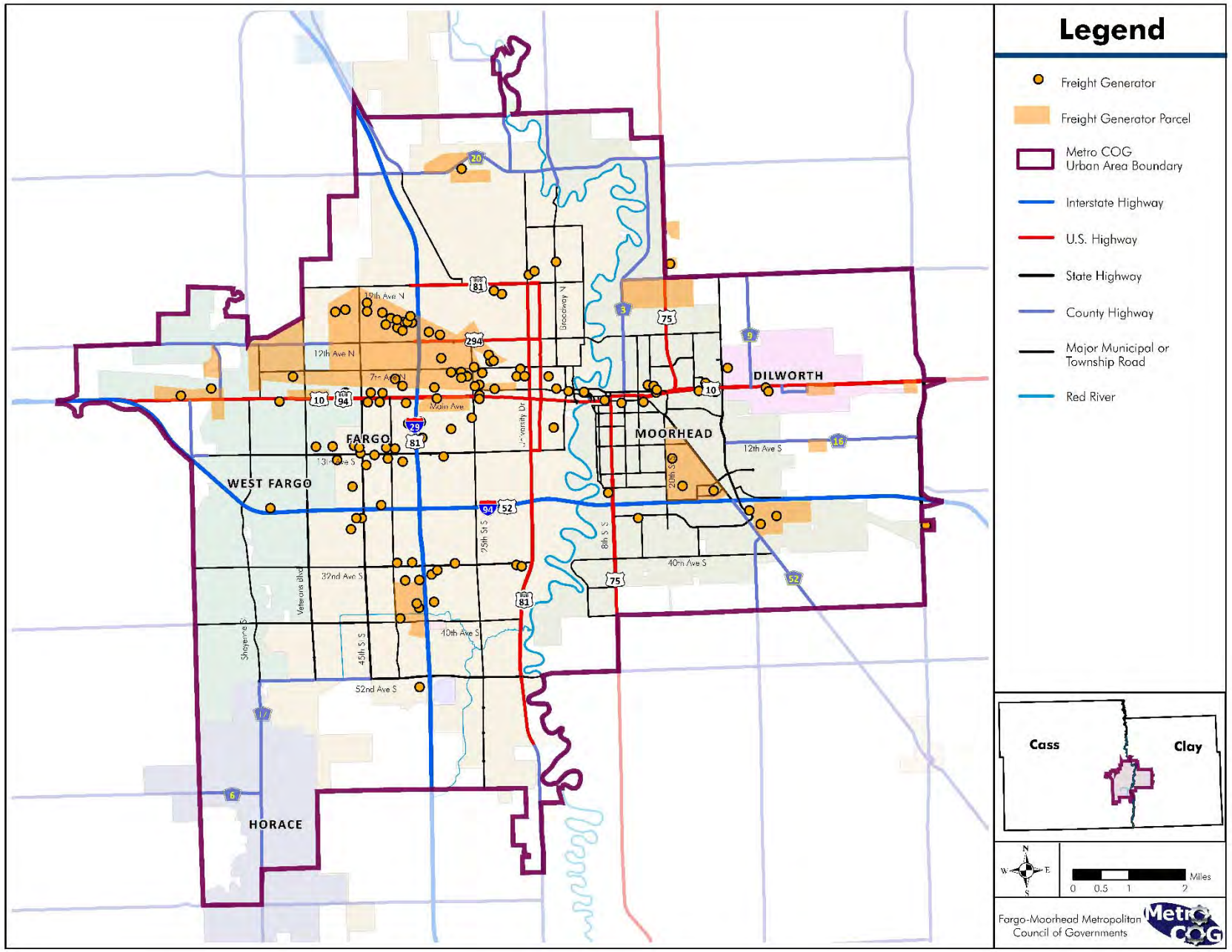
Source: FHWA Freight Analysis Framework, Version 3.4; Metro COG, 2016

Figure 18. 2040 Projected Freight Tonnage in the Fargo-Moorhead UZA



Source: FHWA Freight Analysis Framework, Version 3.4; Metro COG, 2016

Figure 19. Local Freight Generators, 2010



Source: Metro COG, 2016

Bicycle & Pedestrian Network

The Fargo-Moorhead regional bicycle and pedestrian network continues to grow steadily as the community further realizes the importance of providing transportation options for all modes. Many steps have been taken in recent years to improve conditions for both cyclists and pedestrians. Jurisdictions continue to make improvements to existing bicycle and pedestrian infrastructure and continue to expand miles of facilities. Safety and education is also an important focus for Metro COG and area jurisdictions.

As part of Metro COG's bicycle/pedestrian efforts, Metro COG has been aggressive in counting bicycle and pedestrian traffic with numerous locations counted every fall and six automated bicycle/pedestrian counters collecting data 24 hours a day, seven days a week.

BICYCLE AND PEDESTRIAN NETWORK CHANGES

Jurisdictions continue to make improvements to existing bicycle and pedestrian infrastructure and continue to expand miles of facilities. Jurisdictions also continue to make sidewalks, paths and crosswalks ADA compliant and every year more signalized crosswalks are fitted with pedestrian countdown pedestrian signal heads. Table 32 shows a listing of all the reported bicycle/pedestrian network changes which occurred in 2015. In addition, a map of the current bicycle and pedestrian network is located on Figure 20 (page 55).

BICYCLE AND PEDESTRIAN SAFETY

Using data received from MnDOT and NDDOT, Metro COG annually tracks crashes involving bicycles and pedestrians. In 2015 there were a total of 37 crashes involving bicycles or pedestrians, 31 of which occurred in Fargo. No fatal events occurred in 2015, and overall crash counts were down significantly from previous years. Figure 21 (located on page 56) contains a map depicting all 2015 crash locations in the urban area.

BICYCLE SAFETY EDUCATION

Bicycle education continues to be a high priority in the area. Metro COG's 2011 Bicycle and Pedestrian Plan identified bicycle safety education as one of ten goals. Educating the public about appropriate operation of bicycles and motor vehicles in relation to each other is a key component in reducing the number of bicycle-related crashes.

In response to the need of providing bicycle education to the public, the Valley Bicycle Summit was created in 2012 with one event held in 2012, two events in 2013 and two events in 2014. In 2015 Metro COG facilitated the Valley Bicycle Summit events which occurred during the Streets Alive event on August 30th. The 2015 Summit provided the public with free Fargo-Moorhead bikeways maps (education materials were shown on maps), educational poster boards, an educational spin-wheel game with prize drawings and more.

In 2013 Metro COG created a website which provides the public with a host of educational information. The educational information includes rules of the road, youth education information, frequently asked questions, and more. In addition to educational information, the website also provides maps, closure information, events, news, and more. The Bike FM website can be visited at www.bikefm.org. Metro COG continues to make updates and provides current information to the website as needed.

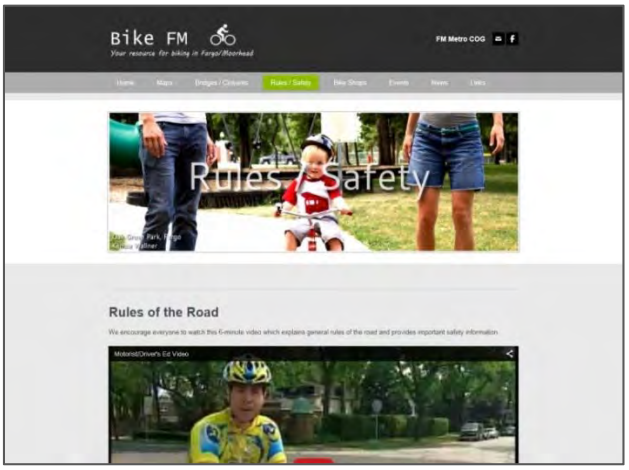


Table 32. 2015 Bicycle and Pedestrian Projects and Improvements

Jurisdiction	Location	Project Description	TIP Project No. / Local
Fargo	31st St S from 52nd Ave S to 64th Ave S	New continuous path	Local
Fargo	63rd St from 52nd Ave S to Co Rd 17	New path alongside new 2 lane connector	Local
Fargo	Near Kennedy Elementary School a Woodhaven Dr	Reconstructed speed hump along existing shared use path	Local
West Fargo	Main Ave between 21st St NW and Drain 21	New 10' shared-use path on both north and south sides of Main Ave	915010
West Fargo	32nd Ave E from Veterans Blvd to Sheyenne St	New 10' shared-use paths on both sides of roadway	Local
West Fargo	23rd Ave E from 3rd St E to 6th St E	New shared-use paths on both sides of roadway	Local
West Fargo	4th St E from 23rd Ave E to 26th Ave E	New 10' shared-use paths on both sides of roadway	Local
West Fargo	4th St E from 38th Ave E to 40th Ave E	New 10' shared-use paths on both sides of roadway	Local
Moorhead	11th St N from 15th Ave N to Wall St	New dedicated bike lanes on roadway	Local
Moorhead	Wall St from Oakport St to Red River	New dedicated bike lanes on roadway	Local

Source: Cities of Fargo, Moorhead, and West Fargo, 2016; Clay County, 2016

BICYCLE & PEDESTRIAN COUNTS

In 2013 Metro COG began a new and extensive bicycle and pedestrian count program. 14 locations around the UZA are manually counted every year for four hours (3:00 pm – 7:00 pm) on weekdays in September. Table 33 compares the counts collected in 2013 - 2015. It is important to note that many of these counts were collected over one day only so factors such as weather could create a significant variance between the count days.

Table 33. 2013- 2015 Manual Bicycle and Pedestrian Counts for 3:00 p.m. to 7:00 p.m.

2013 – 2015 Manual Bicycle & Pedestrian Counts per Hour						
Location	Bikes			Pedestrians		
	2013	2014	2015	2013	2014	2015
7th St NE at 4th Ave NE, Dilworth	0	3	2	1	4	7
9th Ave S under I-29, Fargo	8	8	5	3	3	2
12th Ave N bridge near 29th St, Fargo	5	4	10	4	5	3
13th Ave S under I-29, Fargo	8	10	7	8	7	8
45th St at 40th Ave S, Fargo*	-	6	5	-	9	7
40th Ave S at 45th St, Fargo*	-	3	1	-	6	4
Broadway at 2nd Ave N, Fargo*	-	20	14	-	354	335
Broadway at Main Ave RR trx, Fargo	17	18	12	53	82	52
12th Ave N at University Dr., Fargo*,**	-	11	15	-	40	33
University Dr. at 12th Ave N, Fargo*,**	-	16	17	-	28	21
NDSU gate at 12th & Univ, Fargo*,**	-	13	12	-	46	36
12th Ave N / 15th Ave N Bridge, F/M	9	12	11	3	6	13
9th St at 17th Ave S, West Fargo*	-	4	5	-	23	12
17th Ave S at 9th St, West Fargo*	-	12	8	-	26	25
* A different method of counting was used at this location in 2013. Therefore 2013 and 2014 counts are not comparable. ** Counts were taken between 1:00 pm – 6:00 pm.						

In addition to the manual counts, bicycle and pedestrian traffic is also collected using infrared trail counters. These counters, permanently installed at six locations around the UZA, collect bicycle/pedestrian traffic 24 hours a day, 7 days a week. The counters have been operating since summer 2014. Table 34 is an overview of the counts recorded in 2014 and 2015. Please note that the infrared trail counters do not distinguish between bicyclists and pedestrians.

Table 34. Automated Bicycle/Pedestrian Counts, Monthly Total

Location	Sept 2014	Dec 2014	March 2015	June 2015	Sept 2015	Dec 2015
West sidewalk of Broadway at 2nd Ave N, Fargo	1153	702	960	-	1145	897
Trail near Rendezvous Park, West Fargo	67	8	38	101	74	-
Gooseberry/Lindenwood Park Bridge, Fargo/Moorhead	424	34	142	-	-	74
Milwaukee Trail mat 35th Ave S, Fargo	318	60	166	390	271	53
Oak Grove/Memorial Park Bridge, Fargo/Moorhead	123	23	-	158	143	25
Red River Trail at 9th Ave S, Fargo	292	39	182	364	-	25

BRONZE BICYCLE FRIENDLY COMMUNITY

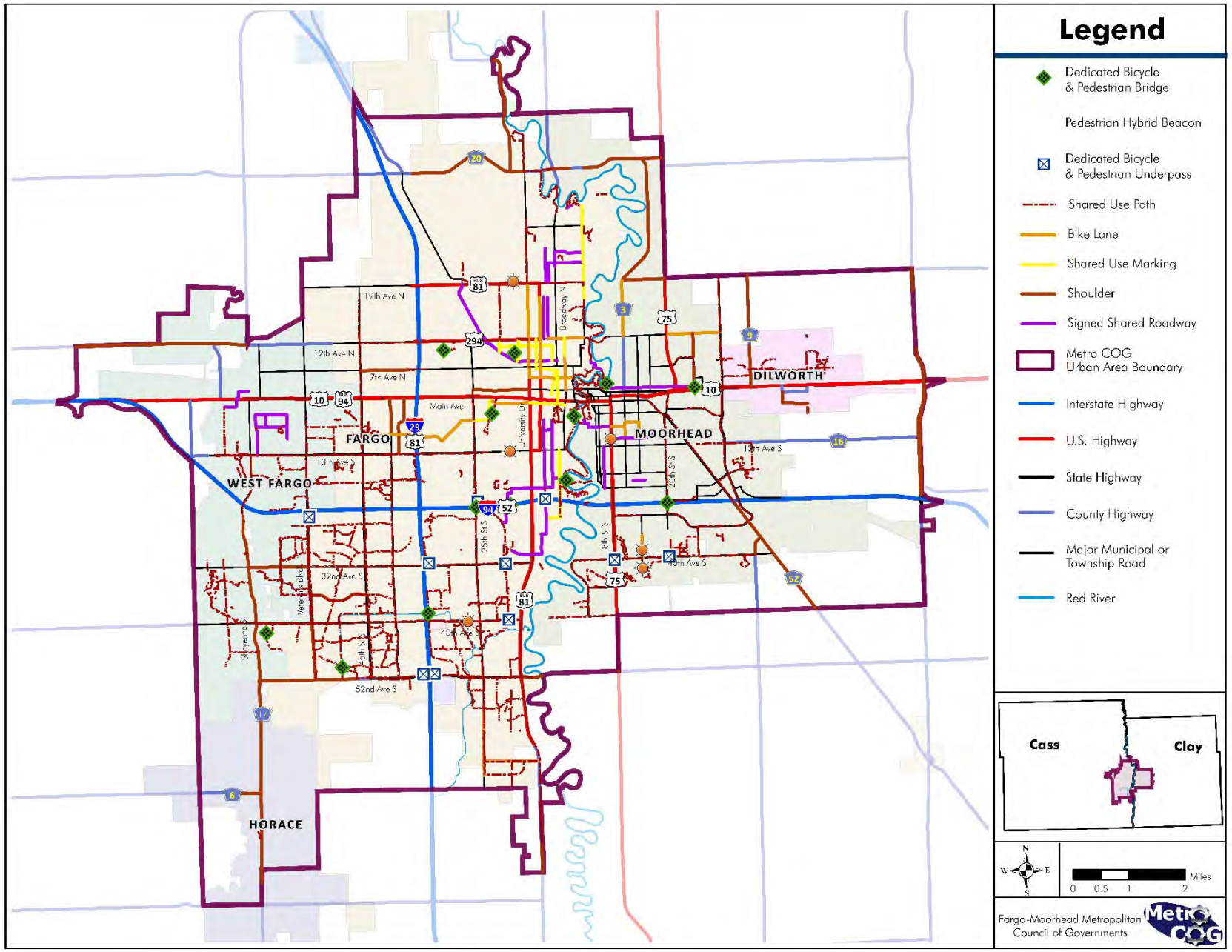
In 2013 Metro COG began the application for Bicycle Friendly Communities for the Fargo-Moorhead area. This included the cities of West Fargo, Fargo, Moorhead, and Dilworth. The application was reviewed by the League of American Bicyclists and in November 2014 the MSA was designated as a Bronze Bicycle Friendly Community. The designation is valid until 2018. On June 14th, 2015 an award ceremony was held outside of Great Northern Bicycle Co. commemorating the award. In 2015 Metro COG worked with local jurisdictions in scoping and purchasing bicycle 30 Bicycle Friendly Community road signs. 26 were installed around the UZA with the remainder held by Metro COG for future use.

BICYCLE / PEDESTRIAN-RELATED STUDIES AND PLANS

In 2014 the Clay County Heartland Trail Task Force was formed to help study and plan the Heartland Trail through Clay County. The Heartland Trail is currently a 49-mile paved shared use path running from Park Rapids, MN to

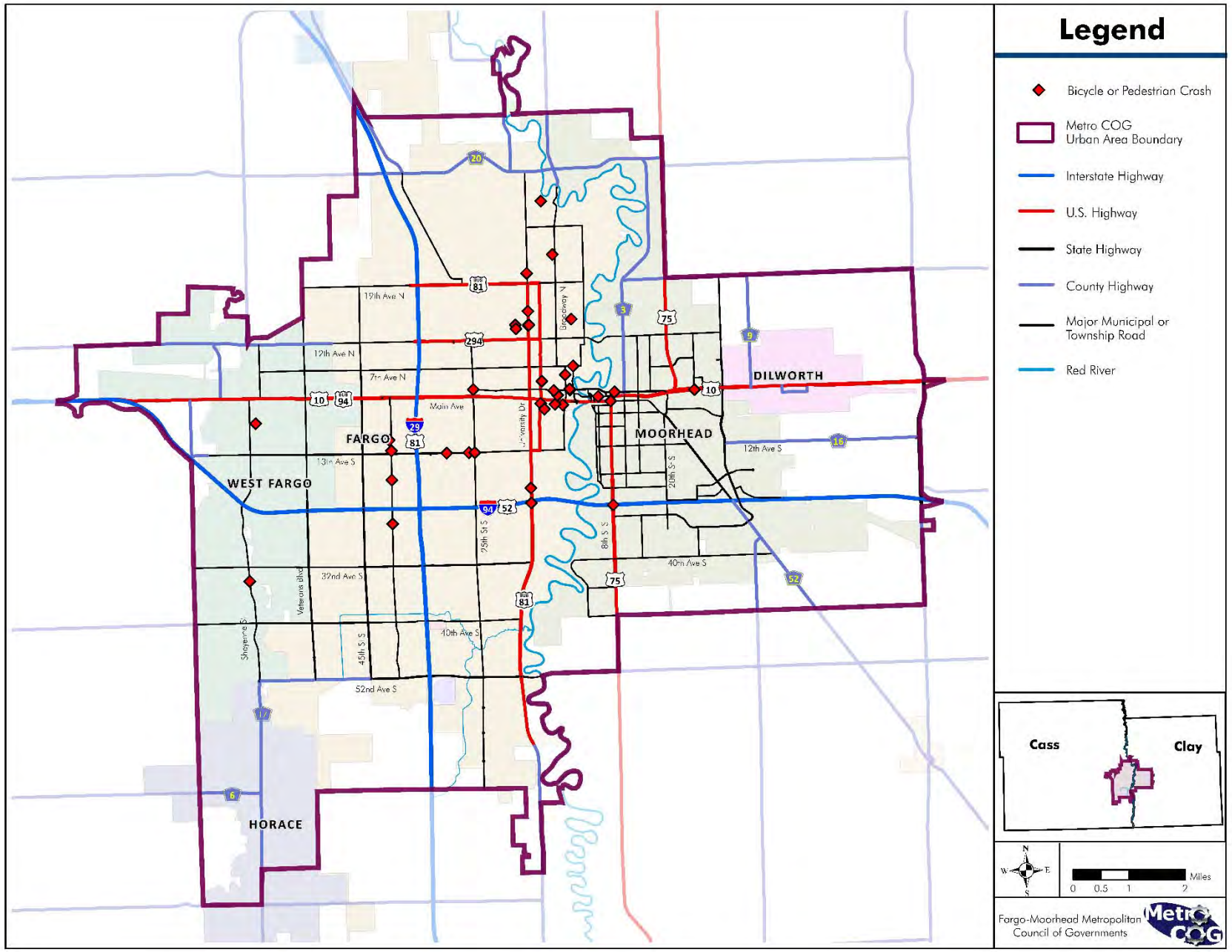
Cass Lake, MN. In 2006 the Minnesota legislature approved the extension of the Heartland Trail from Park Rapids to Moorhead. Metro COG continues to facilitate the meetings of the Clay County Heartland Trail Task Force and the Heartland Trail – Buffalo River State Park to Hawley Subcommittee.

Figure 20. Fargo-Moorhead Bicycle and Pedestrian Network, 2015



Source: Metro COG, 2016

Figure 21. 2015 Bicycle and Pedestrian Accidents



Sources: MnDOT Crash Data, 2016; NDDOT Crash Data, 2016; Metro COG, 2016

Transit System

The Fargo-Moorhead Metropolitan Area offers numerous public transportation opportunities for its residents and visitors. There are five primary transit providers receiving public funding; together these providers offer fixed route transit services, rural commuter services, senior dial-a-ride services, and ADA demand response services. The transit providers servicing the Metro Area include:

- Metro Area Transit (MATBUS) Fixed Route;
- MAT Paratransit;
- Valley Senior Services (VSS);
- Handi-Wheels; and
- Transit Alternatives

This chapter provides a detailed overview of each transit service and the applicable service area.

Services

FIXED ROUTE SERVICE

Fixed routes account for the bulk of public transit ridership in the Metropolitan Area. Routes operated by MATBUS are contained entirely within the jurisdictional limits of Fargo, West Fargo, Moorhead, and Dilworth, thereby entirely within the UZA. A contributing factor to this service area delineation is the applicability and use of 49 U.S.C. 5307 Urbanized Area Formula Program, which provides substantial financial support for the operation of fixed route transit in Fargo-Moorhead. Figure 22 shows fixed routes, transfer points, and shelter locations as of December 31, 2015. MATBUS maintains 104 shelters and facilities, and the majority of the structures are located in high demand areas such as commercial areas, colleges, public housing, health facilities and human service facilities. Heated shelters and facilities are provided at the West Acres Transit Hub, NDSU Memorial Union Transit Hub, the FargoDome, MSUM on 14th Street, and at Concordia College on 5th Street.

PARATRANSIT SERVICE

MAT paratransit provides non-emergency, lift-equipped transportation services for individuals whom are functionally unable to ride the MAT fixed route system. The service is door to door for eligible riders; however, it is a 'shared ride service' which means other passenger stops are accommodated as necessary in route to a destination.

Prior to existence of the Americans with Disabilities Act of 1990 (ADA), paratransit was typically provided by either non-profit human service agencies or public transit agencies per requirements set forth in Section 504 of the Rehabilitation Act of 1973. This Act prohibited the exclusion of the disabled from any program or activity receiving federal financial assistance. The Code of Federal Regulations (Title 49, 37.131(a)) sets forth requirements for making buses accessible and other regulations relating to paratransit services within public transit service areas. In regards to the service boundary, a transit provider must provide "complementary paratransit service to origins and destinations within corridors with a width of three-fourths of a mile on each side of each fixed route, including three-fourths of a mile radius at the ends of each fixed route."[12]

UPDATE TO THE MATBUS TRANSIT DEVELOPMENT PLAN

The Transit Development Plan (TDP) is the long-range planning document for transit operations in the greater Fargo-Moorhead region. It encompasses fixed-route, demand/response (paratransit), and senior-ride operations, whether they are run through a municipality or other non-profit agency.

Every five years the TDP is updated to reflect current conditions and readjust future goals. The TDP was updated throughout 2015 along with the Coordinated Human Services Transportation Plan (HSTP).

The major component of the plan details modifications to be made to the system that could occur in the next five years. These projects consist of both modifications to existing routes and implementation of new service.

Since the Last TDP MATBUS has rapidly expanded both its ridership and route structure. Many of the project listed in the prior TDP were implemented within the first year after its approval. The 2016 TDP differs in that it casts a farther net into the future, incorporating very large service requests such as night and Sunday service that would be very expensive. Transit service in the region is nearing a crossroads. Moorhead and Fargo have operated separate municipal transit services that essentially fly under one banner, MATBUS. With the increasing need for more and more transit service in the region, MATBUS is strongly considering moving towards a transit authority. However,

[12] Per the Code of Federal Regulation, Title 49, 37.131 (a).

under North Dakota Century Code, any authority with taxing capability must be sanctioned by the legislature.

With an ever-expanding service area due to the rapid growth of the metro area, MATBUS must find additional resources to extend service to growth areas in the Fargo-Moorhead metro area. Facilities providing essential services such as Sanford Hospital have relocated their facilities to areas outside of the traditional urban core. This has created a quandary for MATBUS and city officials on how to use resources to service such facilities that are no longer located on transit routes but cater to transit dependent populations.

SENIOR RIDE AND RURAL TRANSIT SERVICES

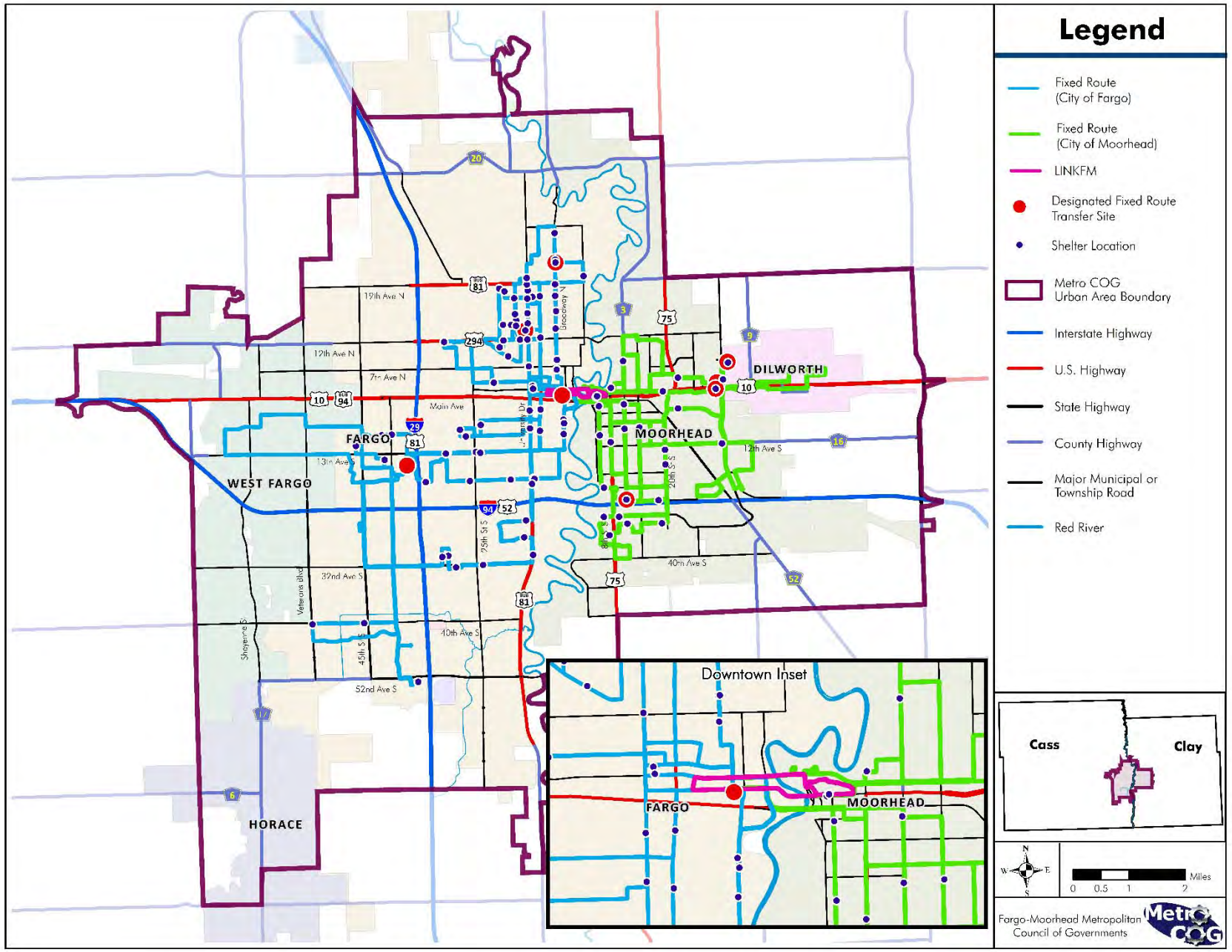
Metro Senior Ride is operated by Valley Senior Services (VSS) in Fargo and West Fargo and under contract with the City of Moorhead for service to Moorhead and Dilworth. Metro Senior Ride provides door-to-door transportation services for senior citizens age 60 and over. To be eligible for this service, individuals must be ambulatory and able to enter and exit the vehicle under their own power. The Senior Ride service area includes the cities of Fargo, Moorhead, West Fargo, and Dilworth.

Within rural areas of the MSA, Cass County Rural Transit and Transit Alternatives in Clay County provide a blend of fixed route and demand response services to individuals. Services offered by Transit Alternatives include a commuter routes from Detroit Lakes and Fergus Falls to Fargo-Moorhead via the GTC, weekly shopping routes to public housing facilities in Moorhead, and Sunday flexible route service to Moorhead. Cass County Rural Transit primarily provides door-to-door transportation services within rural Cass County as well as a few weekly routes to selected peripheral communities (e.g. Casselton, Mapleton) to accommodate senior residents.

SPECIALIZED TRANSPORTATION SERVICES

In recent years, MATBUS and Metro COG have cooperatively undertaken extensive transportation planning and mobility management efforts to ensure the transportation needs of metropolitan citizens are reasonably met. In addition to fixed route, paratransit, senior ride, and rural transit, the Metropolitan Area has approximately 30 private/public transportation providers whom serve a diverse set of specialized transportation and mobility needs, mainly for elderly, individuals with disabilities and medical trips. The Fargo-Moorhead Metropolitan Area is a regional medical center and is also a significant population center for human and social services. Thus, there is a growing population that needs access to these services. On a bi-annual cycle, Metro COG and MATBUS survey these providers to gather data and establish an understanding of operational features and services. Based on this information, Metro COG and MATBUS publish the 'FM Ride Source' which catalogues available transportation services in the Metropolitan Area. This document has been published since 1978, and is formerly known as the 'Directory of Special Transportation Services'. To acquire a copy of this directory, please visit the City of Fargo's website at www.fmridesource.com or contact either Metro COG or MATBUS directly for information on obtaining a copy.

Figure 22. MATBUS Fixed Routes, Transfer Sites, and Shelter Locations



Sources: MATBUS, 2016; Metro COG, 2016

2015 System Operations, Performance and Trends

In 2015, the transit system provided a total of 2,176,082 rides, including all fixed routes, paratransit services, rural commuter services, senior ride services, and ADA demand response services within the region. MATBUS fixed-route ridership decreased by approximately seven percent in 2015 over 2014 totals, likely due to a combination of significantly lower gas prices, on-demand taxi services, and the implementation of the Great Rides Bike Share program. Paratransit ridership also decreased slightly in 2015, and has declined by approximately 13 percent over the past five years. Table 35 summarizes total ridership data and the five year trends for the primary transit providers in the MSA.

Table 35. Transit Ridership Summary, 2011 - 2015

Transit System	Service	2011	2012	2013	2014	2015
Metro Area Transit (MAT-BUS)	Fargo Fixed[13]	1,667,029	1,608,628	1,682,267	1,741,524	1,600,610
	MHD Fixed	433,676	436,304	452,624	482,177	458,975
	Total MAT Fixed	2,100,705	2,044,932	2,134,891	2,223,701	2,059,585
	MAT Paratransit	58,992	54,217	53,403	53,893	51,513
Transit Alternatives	All Services	7,232	6,797	8,016		
Valley Senior Service	Fargo/ WF	36,328	35,098	38,666	43,478	42,831
	MHD / Dilworth	6,323	7,492	8,042	8,301	10,143
	Cass County Rural Transit	2,013	1,872	1,963	1,792	2,207
Handi-Wheels	All Services	13,844	15,398	10,845	9,739	9,803
Total	**All Services**	**2,225,437**	**2,165,806**	**2,252,774**	**2,285,895**	**2,176,082**

Sources: MATBUS, Valley Senior Services, Handi-Wheels, Productive Alternatives, Inc.

FIXED ROUTE OPERATING CHARACTERISTICS

Table 36 (p. 61) depicts the total ridership and revenue hours, by route, for the fixed route system within Fargo and Moorhead for 2015. Route 15, which travels between the downtown GTC and the West Acres Mall and 13th Avenue commercial corridor, continues to be the heavily utilized route, totaling over 339,000 rides in 2015. Routes 32 and 33, both of which carry sizeable numbers of NDSU students, are also routes which account for a high proportion of the total transit ridership in the area. As depicted in Figure 23 on the following page, college students comprise the bulk of the users of the fixed-route system and account for ½ of the total ridership in 2015.

A graph comparing the fixed route ridership trends of the last two years is depicted in Figure 24 (p. 61). While 2015 fixed-route ridership was down approximately 8 percent in Fargo and 5 percent in Moorhead from 2014 totals, ridership has remained very consistent over the past five years. As previously mentioned, 2015 ridership totals likely reflective of a dramatic decline in the cost of gasoline as well as the establishment of the Great Rides Bike Share program in Fargo. Gasoline prices fell over 30 percent from 2014 to 2015, a dramatic figure which has a significant effect on transit ridership. This is reflected in the adult, youth, and child ridership totals, which declined by 10, 13, and 17 percent over the past year, respectively. College ridership, which fell by 7 percent in 2015, was likely significantly impacted by the Bike Share program. Of the 145,353 Bike Share trips taken in 2015, NDSU students accounted for 136,586, or 94 percent.

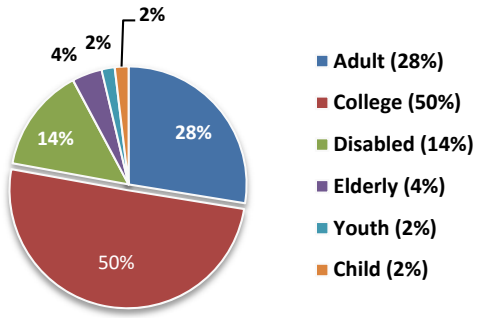
[13] Includes NDSU Circular Routes and U-Pass Ridership totals

Table 36. 2015 Ridership, Revenue Hours, and Rides per Revenue Hour

Moorhead	Total Ridership	Revenue Hours	Rides per Rev. Hour
Route 1	76,401	3,481	21.95
Route 2	123,362	4,290	28.76
Route 3	48,675	3,497	13.92
Route 4	110,965	7,687	14.44
Route 5	52,495	3,492	15.03
Route 6	12,267	1,817	6.75
Route 7	10,229	1,382	7.40
Route 8	16,815	1,382	12.17
Route 9	8,079	1,970	4.10
MHD Total	**459,288**	**28,995**	**15.84**
Fargo			
Route 11	82,527	4,401	18.75
Route 13	171,600	8,852	19.39
Route 13U	64,928	2,712	23.95
Route 14	174,363	13,481	12.93
Route 15	339,443	16,045	21.16
Route 16	74,759	6,085	12.29
Route 17	41,267	2,277	18.12
Route 18	60,066	4,401	13.65
Route 23	24,565	4,846	5.07
Route 31	52,937	2,025	26.14
Route 32	194,857	2,268	85.92
Route 33	226,883	4,746	47.81
Route 34	73,459	2,322	31.64
Route 35	7,643	405	18.87
FAR Total	**1,590,183**	**74,864**	**21.24**
LINKFM	**10,427**	**2,065**	**5.05**
Total	**2,059,585**	**105,924**	**19.44**

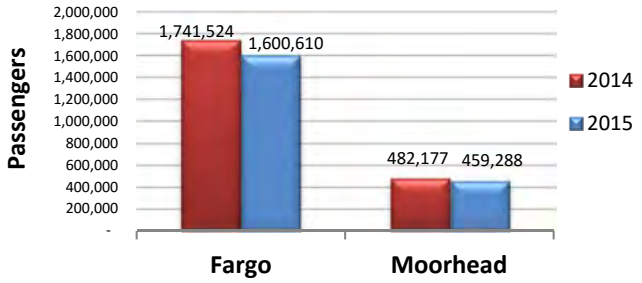
Source: MATBUS, 2016

Figure 23. 2015 MATBUS Rides, by Type



Source: MATBUS, 2016

Figure 24. Fixed Route Ridership, 2014 - 2015



Source: MATBUS, 2016

PARATRANSIT RIDERSHIP CHARACTERISTICS

Table 37 displays paratransit ridership since 2010, with splits between each applicable jurisdiction. Pursuant to current agreements, the City of Fargo and City of Moorhead share paratransit service costs based on a ridership pro-rata, with the exception that both cities are responsible for replacing their respective portion of the metropolitan paratransit fleet. As of 2015, the City of Dilworth is charged for use of the paratransit system and pays a pro rate share of the local share match based on ridership for both Paratransit and Senior Ride service to Dilworth Residents. The City of West Fargo is charged a 'per ride' cost, which is collected by the City of Fargo.

Table 37. Paratransit Ridership, 2011-2015

Year	Fargo	West Fargo	Moorhead	Dilworth	Total
2011	38,307	7,914	11,707	1,064	58,992
2012	36,612	7,001	9,576	1,028	54,217
2013	37,562	5,070	9,059	1,712	53,403
2014	39,160	4,695	8,647	1,391	53,893
2015	36,999	4,970	8,373	1,120	51,462
Ridership Change – 2014 to 2015	**-6%**	**6%**	**-3%**	**-19%**	**-5%**

Sources: MATBUS, 2016

PARATRANSIT OPERATING CHARACTERISTICS

Table 38 provides an overview of the MATBUS paratransit operational characteristics for 2015. While total ridership declined by approximately 5 percent in 2015, the passengers per hour and miles per passenger both increased. This trend indicates that the paratransit operations continues to become more efficient while still meeting the needs of riders requiring paratransit services.

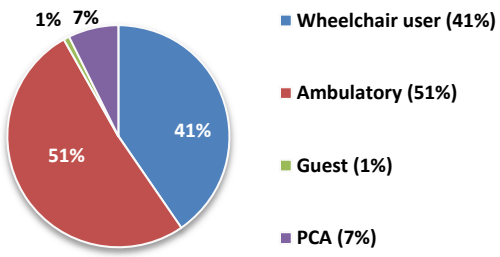
Figure 25 provides an overview of the customers which utilized the paratransit system in 2015. Overall, 41 percent of all riders were wheelchair users, while 51 percent were ambulatory. The remaining 8 percent were either personal care assistants or guests. The ridership splits for 2015 closely mirror those of previous years, although there has been an overall trend of declining ambulatory users over the past four years.

Table 38. Paratransit Operational Characteristics, 2015

Category	2015
Annual Service Miles	336,408
Total Ridership	51,462
Total Operating Days	356
Daily Service Miles	945
Revenue Hours	23,943
Rides per Day	145
Passengers per Hour	2.23
Miles per Passenger	6.54
Fleet Size	16
Total Operating Costs	$1,350,672
Cost per Passenger Trip	$26.24

Source: MATBUS, 2016

Figure 25: MAT Paratransit Rides by Customer Type, 2015



Source: MATBUS, 2016

SENIOR RIDE AND RURAL TRANSIT RIDERSHIP CHARACTERISTICS

Table 39 outlines the annual senior ride and rural transit ridership totals in the Fargo-Moorhead Metropolitan Area for 2011-2015. Of note, the total ridership on senior and rural transit systems increased slightly in 2015, due in large part to increased senior ridership in Moorhead and Dilworth.

Table 39. Senior Ride & Rural Transit Ridership, 2011-2015

System	Route	2011	2012	2013	2014[14]	2015
Transit Alternatives/ Clay County Rural Transit	All Services	7,232	6,797	8,016		
Valley Senior Services	Fargo/ WF	36,328	35,098	38,666	43,478	42,831
	Moorhead Dilworth	6,323	7,492	8,042	8,301	10,143
	Cass County Rural Transit	2,013	1,872	1,963	1,792	2,207
Total	**All Systems**	**51,896**	**51,259**	**55,486**	**53,569**	**55,181**

Sources: MATBUS, Metro COG, 2016

U-PASS RIDERSHIP

According to MATBUS data for 2015, student ridership accounts for 977,455 or roughly 50 percent, of all rides on the fixed route system. Table 40 identifies student ridership for the past five academic years. The U-Pass program was instituted in 2001 as a demonstration program and due to immediate success at NDSU the program was expanded to include all four of the larger Metropolitan Area's colleges and universities including Concordia College, MSUM, M|State and NDSU. Each college contracts separately with MATBUS and provides an annual subsidy allowing students to use any MAT fixed route for no additional fees, with discounts usable throughout the entire academic year. Data provided within Table 40 does not include ridership on NDSU circulators (Routes 31, 32, 33, 34 and 35).

[14] 2014/2015 ridership figures were not available for all transit providers at the time of publication.

Table 40. U-Pass Ridership, Academic Years Spanning 2010-2015

Academic Year[15]	NDSU	Concordia	MSUM	M|State	Total
2010-2011	254,881	13,602	97,768	36,452	402,703
2011-2012	234,925	13,932	101,590	46,746	397,193
2012-2013	261,202	12,517	100,250	46,646	420,615
2013-2014	281,759	11,060	112,444	43,719	448,982
2014-2015	255,243	12,656	115,512	35,109	418,520

Source: MATBUS, 2016

2015 Projects, Purchases, and Improvements

Pursuant to initiatives set forth within MAP-21, Metro COG annually tracks the efforts of the local transit operators respective to projects, capital purchases, and system improvements/investments. Table 41 summarizes and documents TIP implementation, as well as any locally funded projects of significance that are not necessarily discernible by reviewing the federally mandated Transportation Improvement Program or Long Range Transportation Plan.

Table 41. 2015 Transit Projects, Purchases, and Improvements

Jurisdiction/Agency	Type	Project Description
MATBUS	Administration	Triennial Review conducted
Moorhead	Equipment	Four (4) new 35-foot diesel fixed-route vehicles
MATBUS	Equipment	New Rider Sweeper/Scrubber for maintaining metro transit garage
Moorhead	Equipment	New replacement van for Moorhead Metro Senior Ride
MATBUS	Equipment	Began partnership with Great Rides Cycles and installed docking station at Ground Transportation Center
Fargo	Equipment	6 new Paratransit Vehicles
Moorhead	Equipment	2 new Paratransit Vehicles
Moorhead	Facilities	Installed shelter at Moorhead Center Mall for LinkFM.
MATBUS	Marketing	Received Two first place APTA Ad Wheel awards for promotion materials (stuffed red panda youth promotion) and print media billboard for ESPN GameDay.
MATBUS	Marketing	Received GRAND APTA AdWheel Award for Print Category
MATBUS	Marketing	Extended advertising trade with RadioFM Media and City of Moorhead.
MATBUS	Marketing	Participated in Stand Up 4 Transportation Day, partnering with UGPTI
MATBUS	Marketing	Transportation Symposium at the downtown library, presentation and tour of articulated bus
MATBUS	Marketing	National Transportation Week - bus wrap and Liberty Middle School
MATBUS	Operations	Completed procurement and contract with First Transit for Transit Operating Service for 2016-2018
MATBUS	Operations	Began new contract for benches with national company, Creative Outdoor Advertising.
Moorhead	Operations	Expanded Metro Senior Ride and MAT Paratransit Services in Moorhead to newly annexed Oakport Township Tract 2.
MATBUS	Operations	Updated No-Show Policy for Paratransit
Fargo	Personnel	Approved new Planner position in Fargo
Moorhead	Route Change	Increased frequency on Route 4 on Saturdays from hourly to every 30 minutes 1/1/15.
Moorhead	Route Change	Deleted "on request" service to Village Green on Route 5 and extended route south to 40th Avenue and new Hornbachers 7/1/15.
Moorhead	Route Change	Changed interling on Satrudays for Route 1, 2, 3 and 5 to be consistent with weekdays - Routes 1/3 and 2/5.
Fargo	New Route	Began Downtown circular Route LinkFM service 6/1/15 through 2/28/16 under pilot program.
MATBUS/Metro COG	Study	Completed survey and began Five-year Transit Development Plan.

Source: MATBUS, 2016

[15] The academic year spans August 1st to July 30th

Transit Fleet Inventory

FLEET INVENTORY – FIXED ROUTE

The City of Fargo and City of Moorhead each procure, operate, and maintain fixed route transit vehicles independently. The entire fixed route fleet is comprised of 43 buses with 27 in operation during peak requirements. A complete 2015 fixed route fleet inventory is provided in Table 42.

Table 42 has been color-coded to provide readers with a quick and easy way to decipher which vehicles are approaching their useful life cycle. The useful life cycle, which is defined by the Federal Transit Administration as a minimum of 500,000 vehicle miles or 12 years of service for fixed-route vehicles, is used to determine which vehicles need to be replaced and gives an approximate timeframe in which replacement will be necessary.

Table 42 uses the following colors to indicate where vehicles are at in their useful life cycle:

- Green: greater than 50 percent of minimum useful life remaining (less than 250,000 miles);
- Yellow: between 25 and 49 percent of the minimum useful life remaining (between 250,001 and 375,000 miles);
- Orange: less than 25 percent of useful life cycle remaining (greater than 375,000 miles);
- Red: vehicle is still in service, but past its useful life cycle (greater than 500,000 miles and/or over 12 years old).

FLEET INVENTORY – PARATRANSIT

MATBUS paratransit operates a joint fleet of vehicles with capital contributions to the fleet under the responsibilities of each city (Fargo & Moorhead). The City of Fargo contributes the West Fargo portion of capital to the fleet and the City of Moorhead contributes the Dilworth portion of capital to the fleet. The existing MAT Paratransit agreement, established in 1996, created a baseline of Fargo contributing eight vehicles to the fleet and Moorhead contributing three vehicles to the fleet for a combined fleet of 11 vehicles. The agreement also specifies that the city experiencing growth in ridership is responsible for any additional vehicles. Since the agreement was initially established, both cities have added vehicles to their inventory to better serve demand. As of December 2015, MATBUS paratransit operates 16 vehicles, with eleven under City of Fargo ownership and five under City of Moorhead ownership. A complete 2015 paratransit fleet inventory is provided in Table 43.

Similar to the fixed-route inventory, Table 43 has been color coded to indicate where vehicles are at in their useful life cycle, using the following thresholds:

- Green: greater than 50 percent of minimum useful life remaining;
- Yellow: between 25 and 49 percent of the minimum useful life remaining;
- Orange: less than 25 percent of useful life cycle remaining;
- Red: vehicle is still in service, but past its useful life cycle.

FLEET INVENTORY – SENIOR RIDE

Table 44 contains a fleet inventory of senior ride services operating within the MSA. This inventory only includes vehicles operated by Valley Senior Services and Cass County Rural Transit. This inventory has also been color-coded to indicate where vehicles are at in regards to their useful life cycle, using the same colors and percentage thresholds as explained in the paratransit section above.

Table 42. Fixed Route Fleet Inventory, December 2015

Vehicle ID	Year	Make/Model	Mileage	Type of Service	Owner
1125	1997	New Flyer	575,461	Fixed Route	Fargo
1124	1997	New Flyer	604,604	Fixed Route	Fargo
1123	1997	New Flyer	527,809	Fixed Route	Fargo
1126	2002	Gillig	484,569	Fixed Route	Fargo
1127	2002	Gillig	509,122	Fixed Route	Fargo
1128	2002	Gillig	481,190	Fixed Route	Fargo
1139	2004	Gillig	431,045	Fixed Route	Fargo
1140	2004	Gillig	476,920	Fixed Route	Fargo
1141	2004	Gillig	439,849	Fixed Route	Fargo
1142	2004	Gillig	452,080	Fixed Route	Fargo
1173	2007	New Flyer	300,752	Fixed Route	Fargo
1174	2007	New Flyer	245,544	Fixed Route	Fargo
1175	2007	New Flyer	257,986	Fixed Route	Fargo
1176	2007	New Flyer	268,644	Fixed Route	Fargo
1184	2009	New Flyer	183,681	Fixed Route	Fargo
1185	2009	New Flyer	166,408	Fixed Route	Fargo
1186	2009	New Flyer	185,639	Fixed Route	Fargo
1187	2009	New Flyer	166,468	Fixed Route	Fargo
1188	2009	New Flyer	172,150	Fixed Route	Fargo
1195	2010	New Flyer	205,507	Fixed Route	Fargo
1196	2010	New Flyer	187,412	Fixed Route	Fargo
1197	2010	New Flyer	177,252	Fixed Route	Fargo
1198	2010	New Flyer	187,176	Fixed Route	Fargo
1199	2010	New Flyer	189,348	Fixed Route	Fargo
1200	2011	New Flyer	170,889	Fixed Route	Fargo
1201	2011	New Flyer	161,933	Fixed Route	Fargo
1220	2013	New Flyer	76,248	Fixed Route	Fargo
1221	2013	New Flyer	82,179	Fixed Route	Fargo
1222	2013	New Flyer	59,106	Fixed Route	Fargo
1223	2013	New Flyer	59,025	Fixed Route	Fargo
4151	2015	New Flyer	297	Fixed Route	Fargo
4152	2015	New Flyer	247	Fixed Route	Fargo
370	2003	Orion VII - 35'	351,532	Fixed Route	Moorhead
371	2003	Orion VII - 35'	394,441	Fixed Route	Moorhead
380	2003	Orion VII - 30'	441,590	Fixed Route	Moorhead
381	2003	Orion VII - 30'	403,855	Fixed Route	Moorhead
382	2003	Orion VII - 30'	457,969	Fixed Route	Moorhead
590	2005	Orion VII - 30'	380,393	Fixed Route	Moorhead
591	2005	Orion VII - 30'	389,380	Fixed Route	Moorhead
592	2005	Orion VII - 30'	387,855	Fixed Route	Moorhead
593	2005	Orion VII - 30'	419,666	Fixed Route	Moorhead
1020	2010	New Flyer - 35'	215,836	Fixed Route	Moorhead
2151	2015	New Flyer - 35'	14,779	Fixed Route	Moorhead

Source: MATBUS, 2016

Table 43. Paratransit Vehicle Inventory, December 2015

Vehicle ID	Year	Make/Model	Mileage	Type of Service	Owner
1177	2008	Ford Supreme	191,763	Paratransit	Moorhead
1218	2012	Ford Goshen GCII	118,980	Paratransit	Moorhead
1225	2014	Ford Goshen GCII	45,409	Paratransit	Moorhead
1231	2015	Ford Goshen GCII	20,956	Paratransit	Moorhead
1232	2015	Ford Goshen GCII	18,987	Paratransit	Moorhead
1180	2008	Ford Supreme	215,521	Paratransit	Fargo
1207	2011	Ford Hybrid	53,268	Paratransit	Fargo
1208	2011	Ford Hybrid	32,324	Paratransit	Fargo
1224	2012	Ford Goshen GCII	81,912	Paratransit	Fargo
1228	2015	Ford Goshen GCII	19,221	Paratransit	Fargo
1229	2015	Ford Goshen GCII	17,907	Paratransit	Fargo
1230	2015	Ford Goshen GCII	18,013	Paratransit	Fargo
1236	2015	Ford Goshen GCII	12,981	Paratransit	Fargo
1237	2015	Ford Goshen GCII	9,093	Paratransit	Fargo
1238	2015	Ford Goshen GCII	5,634	Paratransit	Fargo
1919	2008	Ford E450	33,656	Paratransit	Fargo

Source: MATBUS, 2016

Table 44. Valley Senior Services Vehicle Inventory

Vehicle ID	Year	Make/Model	Mileage	Owner
1167	1999	Ford Windstar	95,105	City of Moorhead
1206	2010	Dodge/Gr. Caravan	144,443	City of Fargo
1209	2013	Dodge/Gr. Caravan	66,286	City of Moorhead
1210	2011	Ford E450	109,043	City of Fargo
1211	2011	Ford E450	19,724	City of Fargo
1212	2011	Dodge/Gr. Caravan	128,193	City of Fargo
1213	2011	Dodge/Gr. Caravan	125,323	City of Fargo
1215	2011	Dodge/Gr. Caravan	97,471	City of Fargo
1216	2011	Dodge/Gr. Caravan	95,447	City of Fargo
1226	2014	Dodge/Gr. Caravan	33,080	City of Moorhead
1240	2001	Dodge/Gr. Caravan	169,829	City of Fargo
1241	2010	Dodge/Gr. Caravan	137,653	City of Fargo
5151	2015	Dodge/Gr. Caravan	5,371	City of Moorhead
6151	2016	Dodge/Gr. Caravan	1,056	City of Fargo
6152	2016	Dodge/Gr. Caravan	1,162	City of Fargo
6153	2016	Dodge/Gr. Caravan	866	City of Fargo
1219	2003	Dodge/Gr. Caravan	236,259	City of Fargo
1194	2009	Ford E450/Goshen	134,654	Cass Cty
1227	2014	Dodge Braun	28,524	Cass Cty

Source: Valley Senior Services, 2016; MATBUS, 2016

Glossary

The glossary of terminology is outlined in alphabetical order and reflects definitions as adopted, utilized and/or commonly applied in Metro COG's transportation planning program.

Advanced Traffic Analysis Center (ATAC):
ATAC is one of the main programs under the umbrella of the Upper Great Plains Transportation Institute (UGPTI) at North Dakota State University. ATAC focuses on enhancing transportation systems in small-to-medium size urban areas and rural areas through state-of-the-art analysis tools and technologies. ATAC worked closely with Metro COG to develop the 2005 base travel demand model (forecast years 2015 and 2035) and has assisted Metro COG with various projects.

American Community Survey (ACS):
The American Community Survey (ACS) is a project established by the US Census Bureau that replaces the "long form" in the decennial census. This process is an on-going statistical survey which is sent to 250,000 addresses per month and will provide access to more current data throughout each decade.

Arterial Roadways (Principal & Minor): Principal and minor arterials carry longer distance traffic between important activity and population centers. These roadways are typically high traffic volume corridors and have more restrictive access standards to allow higher design speeds. Examples in the Fargo-Moorhead Metropolitan Area include: Interstate 94 (principal), Interstate 29 (principal), 45th Street South (principal), 32nd Avenue South (minor) and 12th Avenue South in Moorhead (minor).

Average Annual Daily Traffic:
In accordance with AASHTO (2001) average daily traffic (ADT) volume is the most basic measure of the traffic demand for a roadway. ADT is defined as the total volume during a given time period (in whole days) divided by the number of days in that period (i.e. annual).

Environmental Justice Database (Low Income / Minority Populations):
To identify significant concentrations of populations and in an effort to comply with Executive Order 12898 Metro COG utilized data from the ACS (2009-2013), decennial 2010 Census, and data from the U.S. Department of Health and Human Services (HHS). Minority population concentrations were determined from block level Census geography data. Blocks where 25 percent or more of the total population was minority (race other than "single-race white") were selected and mapped. Parcels designated as non-residential were removed. These areas represent areas were a significant group of minorities reside; however, it is important to note that if a parcel is selected it simply means it falls within a Census block whose minority population is at least 25 percent of the total. Low income population concentrations were determined from block group level Census geography data. Block groups where 25 percent or more of the total population were low income were selected and mapped. Parcels designated as non-residential were removed. These areas represent areas were a significant group of low income individuals reside; however, it is important to note that if a parcel is selected it simply means it falls within a Census block group whose low income population is at least 25 percent of the total.

Fixed Route:
Transit vehicles travel an established route and passengers are picked up and dropped off at designated locations along the route alignment. Typically, fixed routes include printed timetables, designated bus stops, and utilize larger vehicles to transport passengers.

Functional Classification:
Functional classification is the process by which roadways are grouped into classes according to the character of service they are intended to provide. For urbanized areas four (4) functional classifications exist: principal arterial, minor arterial, collector and local. Federal transportation funding is only available for functionally classified roads with a collector designation or above.

Geocode(ing):
A process facilitated through Geographic Information Systems (GIS) whereby geographic coordinates tabular data featuring street addresses are matched to attributes in an appropriate shapefile. The result of this match is an accurate spatial representation of the address noted in the original tabular data.

Jurisdictions:
The member units of government which are located within the boundary of Metro COG's planning area (see MPA). Member jurisdictions include: North Dakota Department of Transportation (NDDOT), Minnesota Department of Transportation (MnDOT), Cass County, Clay County, City of West Fargo, City of Moorhead, City of Fargo, and the City of Dilworth.

MAP-21:
MAP-21 stands for Moving Ahead for Progress in the 21st Century. This act was signed into law by President Obama on July 6, 2012. Map-21 funds surface transportation projects and with funding intended to be distributed using a performance-based method.

McKibben Demographic Forecast:
In 2012, Metro COG worked with its member local units of government and McKibben Demographic Research to create the Demographic Forecast for the Fargo-Moorhead Metropolitan Statistical Area (MSA). The report established demographic projections through the year 2040 for the MSA and is a critical element of the socio-economic data that is necessary in order to construct the regional travel demand model.

Metropolitan Planning Area (MPA):
Defined by 23 CFR 450.104 as the geographic area determined by agreement between the Metropolitan Planning Organization (MPO) for the Metropolitan Area and the Governor of the State, within which the metropolitan transportation planning process must be carried out. The MPA boundary, at minimum, shall include the UZA and all contiguous geographic areas likely to become urbanized within a twenty (20) year forecast period outlined within the adopted Metropolitan Area Transportation Plan.

Metropolitan Planning Organization (MPO):
An MPO is defined under Federal Transportation Legislation 23 USC 134(b) and 49 USC 5303(c) as the designated local decision making body that is responsible for carrying out the metropolitan transportation planning process. An MPO is designated for an urban area with a population of more than 50,000 as established by the most recent decennial census.

Metropolitan Statistical Area (MSA):
According to the US Census Bureau, metropolitan and micropolitan statistical areas are geographic entities defined by the US Office of Management and Budget (OMB) for use by Federal agencies in collecting, tabulating, and publishing federal statistics. An MSA contains a core urban area of 50,000 or more population (i.e. Fargo-Moorhead) and includes one or more counties (Cass ND and Clay MN) containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core. The Census-defined MSA for the region is the counties of Cass and Clay.

Paratransit:
A form of passenger transportation which is primarily intended for mobility-impaired, mentally impaired, or senior citizens (elderly). Vehicles are generally equipped with wheelchair lifts or ramps. Service is often complimentary to other public transit services and is mandated within a 3/4 mile radius of fixed route bus service.

Public Participation Program (PPP):
In accordance with SAFETEA-LU and Map 21, Metro COG's adopted PPP sets forth formalized procedures for effective community participation in the development, updating or amendment processes related to the LRTP (or any of it sub-elements) or the TIP. Metro COG's existing PPP was adopted in January of 2013.

Transit Development Plan (TDP):
The TDP functions as a sub-element of the Long Range Transportation Plan and is intended to identify strategies and recommendations to improve transit service delivery within the Metropolitan Area. The TDP is developed under a five (5) year planning horizon and pursuant to federal law (23 CFR 450.322) the plan shall consider both short-range and long-range strategies/actions that lead to the development of an integrated multimodal transportation system that efficiently moves people and addresses current/future transportation demand.

Transportation Improvement Program (TIP):
Pursuant to 23 CFR 450.104, the TIP is a prioritized listing/program of transportation projects covering a period of four (4) years that is developed and formally adopted by an MPO as part of the metropolitan transportation planning process, consistent with the adopted LRTP, and required for projects to be eligible for funding under title 23 USC and title 49 USC Chapter 53.

Transportation Analysis Zone (TAZ):
A traffic analysis zone is a unit of geography that is most commonly used in conventional transportation planning (forecast) models. The geography is delineated by state and/or local transportation officials for tabulating traffic related data, especially trip related data. Traffic Analysis Zones typically consist of one or more census blocks, block groups or tracts although geographies are generally not exactly parallel with Census derived boundaries.

Unified Planning Work Program (UPWP):
Pursuant to 23 CFR 450.308, the UPWP formally identifies the planning priorities for the Fargo-Moorhead Metropolitan Area for a two year timeframe. The UPWP is developed by the MPO in cooperation with NDDOT, MnDOT, MATBUS, and Fargo-Moorhead member jurisdictions. The document is constructed to implement certain activities from previously adopted plans, programs and policies relative to the Metropolitan Planning Program; which includes activities related to the maintenance and implementation of the 2009 Long Range Transportation Plan (LRTP).

Urbanized Area (UZA):
Urbanized Area is a term used by both the U.S. Census Bureau and Federal Transportation Legislation. From a transportation perspective, the UZA is a statistical geographic area with a population of 50,000 or more and an overall population density of at least 1,000 people per square mile. The urban area can be adjusted by state and local officials under federal law, resulting in the Federal Aid Urban Area (FAUA). The UZA together with Urban Clusters (2,500 to 49,999 people) produces the 'Urban Area'.

Vehicle Miles Traveled (VMT):
A transportation demand measurement which refers to the total number of miles traveled by all vehicles during a defined time period, typically calculated in daily VMT or annual VMT. VMT is calculated by multiplying the roadway segment length (miles) by the AADT.