APPENDIX D:
Socioeconomics and Land Use Forecasting

SOCIOECONOMICS AND LAND USE FORECASTING

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GREAT FALLS AREA

Long Range Transportation Plan - 2018 Update

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SOCIOECONOMICS AND LAND USE FORECASTING

1.0 INTRODUCTION

Local and regional population and economic characteristics have important influences on motor vehicle travel. A review of demographics for the *Great Falls Area Long Range Transportation Plan* (LRTP) is appropriate to gain an understanding of historical trends in population, age, race and ethnicity. Understanding the composition of the population is necessary, as the data may influence the types of improvements that are identified. For example, an aging population may indicate a need for specific types of transportation improvements such as transit services and/or non-motorized infrastructure improvements. Additionally, the presence of a disadvantaged population may warrant other considerations.

Likewise, existing land uses and potential land use changes have a direct influence on the transportation network and its use. For this reason, it is important to review community development patterns over time and understand where community conditions may be favorable for new residential and non-residential growth.

This memorandum discusses the background and assumptions used to project growth in the Great Falls area for the planning horizon. By using population, employment and other socioeconomic trends as aids, the future transportation requirements will be defined. For the LRTP, the study area includes all lands within the City of Great Falls, Malmstrom Air Force Base (AFB), the unincorporated community of Black Eagle, Great Falls International Airport, and adjacent lands in Cascade County where suburban development has occurred or may occur in the future.

A travel demand model of the transportation system for Cascade County was built by the Montana Department of Transportation (MDT). Information from the analysis in this memo was used to update the allocations of future residential and employment growth. The changes to the system that are projected to occur by the year 2038 were incorporated into the model to forecast the future transportation conditions.

2.0 POPULATION AND DEMOGRAPHIC TRENDS

Understanding Great Falls' population characteristics and growth trends is crucial for this long-range planning process. In order to properly accommodate for the transportation needs of current and future residents of the Great Falls Area, it is important to recognize both the number of people living in and around the study area, as well as their key demographic characteristics. This will help assure all residents have access to appropriate and efficient transportation facilities.

2.1. Historic Population Trends

Table 1 shows the total populations for Cascade County, the City of Great Falls and the Malmstrom AFB and Black Eagle Census Designated Places (CDP) according to the Census over the 1970 to 2010 period. CDPs are delineated by the Census Bureau to provide data for settled concentrations of population that are identifiable by name but are not legally incorporated. Population data is available for Malmstrom AFB over the 1970-2010 period. The Black Eagle CDP was initially created for the 2000 Census and data for earlier censuses is not available for this subdivision of Cascade County. **Table 1**

also shows the overall change in residents (shown numerically and as a percentage) for the County, the City of Great Falls, and other geographies of interest during each decade since 1970.

The table shows the total population of Cascade County has fluctuated slightly, but has generally remained near 81,000 residents over the 1970-2010 period. The City of Great Falls recorded its highest population (60,091) at the time of the 1970 Census. After two decades of decline, the City's population began to increase after 1990 and had approximately 58,500 residents in 2010. The population of Malmstrom AFB has decreased sharply every decade since 1970. By 2010, Malmstrom AFT had 5,000 fewer residents than at the time of the 1970 Census. The population of the Black Eagle CDP was approximately 900 at the time of the last two census counts.

Table 1: Historic Population Data

Area	1970	1980		1990		2000		2010	
Cascade County	**81,804**	**80,696**		**77,691**		**80,357**		**81,327**	
Net Change (%)	--	*-1,108*	*-1.4%*	*-3,005*	*-3.7%*	*2,666*	*3.4%*	*970*	*1.2%*
City of Great Falls	**60,091**	**56,725**		**55,097**		**56,690**		**58,505**	
Net Change (%)	--	*-3,366*	*-5.6%*	*-1,628*	*-2.9%*	*1,593*	*2.9%*	*1,815*	*3.2%*
Malmstrom AFB CDP	**8,374**	**6,675**		**5,938**		**4,544**		**3,472**	
Net Change (%)	--	*-1,699*	*-20.3%*	*-737*	*-11.0%*	*-1,394*	*-23.5%*	*-1,072*	*-23.6%*
Black Eagle CDP	[a]	[a]		[a]		**914**		**904**	
Net Change (%)	--	--		--		--		*-10*	*-1.1%*
State of Montana	**694,409**	**786,690**		**799,065**		**902,195**		**989,415**	
Net Change (%)	--	*92,281*	*13.3%*	*12,375*	*1.6%*	*103,130*	*12.9%*	*87,220*	*9.7%*
United States	**203,392,031**	**226,545,805**		**248,709,873**		**281,421,906**		**308,745,538**	
Net Change (%)	--	*23,153,774*	*11.4%*	*22,164,068*	*9.8%*	*32,712,033*	*13.2%*	*27,323,632*	*9.7%*

Source: US Bureau of the Census, Census of the Population
[a] No data available

Both the State of Montana and the United States (US) showed population increases during each decade between 1970 and 2010. Overall, the population of the US and State of Montana, increased by 52 percent and 42 percent, respectively over the 1970-2010 period. During the same period, the total population of Cascade County declined approximately 0.6 percent and the population of the City of Great Falls showed a 2 percent overall decline. Between 1990 and 2010, the County's population increased by 4.7 percent and the City's population grew by 4.4 percent.

Table 2 presents historical compound annual growth rates (CAGR) for population for Cascade County and the City of Great Falls and compares them with the growth rates seen for the State of Montana and the US. The population losses seen in Cascade County and the City of Great Falls during the 1970s and 1980s, coupled with the slow growth seen over the last 20 years, has resulted in long term growth rates of near zero. Positive rates of annual population growth have been recorded for both the County and City in the last 20 years. However, these annual growth rates are well below those seen for the state and nation.

Table 2: Historic Compound Annual Growth Rates

Area	Last 40 Years (1970 - 2010)	Last 20 Years (1990 - 2010)	Last 10 Years (2000 - 2010)
Cascade County	-0.01%	0.23%	0.12%
City of Great Falls	-0.07%	0.30%	0.32%
State of Montana	0.89%	1.07%	0.93%
United States	1.05%	1.09%	0.93%

2.2. Population Changes Since 2010

The Census Bureau releases population estimates each year for various geographies to update information collected in the most recent census. Each new series of data incorporates the latest administrative record data, geographic boundaries, and methodology to provide annual revisions to the decennial census. **Table 3** shows the US Census Bureau estimates of current (2016) populations for Cascade County, the City of Great Falls, the State of Montana, and the nation. These estimates show that populations in the County and City are continuing to increase at rates greater than those seen during the last two decades, but less than those seen in the last decade. The rate of growth continues to lag that seen for the state and nation.

Table 3: Population Changes Since 2010

Area	2010 Census	2014 Estimate	2015 Estimate	2016 Estimate	Annual % Change (2010-2016)
Cascade County	81,327	82,236	82,118	81,755	0.09%
City of Great Falls	58,505	59,562	59,584	59,178	0.19%
State of Montana	989,415	1,022,867	1,032,073	1,042,520	0.88%
United States	308,745,538	318,563,456	320,896,618	323,127,513	0.76%

Source: US Bureau of the Census, Current Estimates Data, available at http://www.census.gov/popest/data/index.html

2.3. Race and Ethnicity

Table 4 depicts the race and ethnicity characteristics in Cascade County, the City of Great Falls, and within the Malmstrom AFB and Black Eagle CDPs based on the American Community Survey (ACS) Profile Report for the 2012-2016 period for these selected geographies. Similar statistics are provided for the State of Montana and the United States for comparison purposes. The ACS data are period estimates meaning they represent the characteristics of the population and housing over a specific data collection period (in this case 5 years). For this reason, the total populations shown differ from those recorded during the 2010 Census. The percentages listed for ethnic groups presented in the table may not match the Census total percentages and percentages may not add up to 100 percent.

Table 4: Population Race and Ethnicity Data (2012-2016)

Subject	City of Great Falls	Cascade County	Malmstrom AFB CDP	Black Eagle CDP	State of Montana	United States
White	87.70%	88.80%	78.70%	91.80%	89.10%	73.30%
Black or African American	0.80%	1.20%	11.80%	0.00%	0.40%	12.60%
American Indian and Alaska Native	5.40%	4.50%	0.40%	5.90%	6.60%	0.80%
Asian	1.10%	0.90%	1.20%	0.00%	0.70%	5.20%
Native Hawaiian and Other Pacific Islander	0.10%	0.10%	0.20%	0.00%	0.10%	0.20%
Some Other Race	0.60%	0.70%	4.90%	0.00%	0.50%	4.80%
Two or More Races	4.30%	3.90%	2.90%	2.30%	2.60%	3.10%
Hispanic or Latino (of any race)	4.10%	4.10%	16.90%	0.00%	3.40%	17.30%
Total Population	**59,479**	**82,049**	**3,933**	**1,022**	**1,023,391**	**318,558,176**

Source: US Bureau of the Census, American Community Survey (ACS) Profile Report 2012-2016 Estimates, available at http://mcdc1.missouri.edu/acsprofiles/acsprofilemenu.html

The populations of Cascade County and the City are predominately white with percentages of minority populations generally similar to those seen for the State of Montana. The racial and ethnic composition of the Malmstrom AFB and Black Eagle CDPs varies somewhat from that of Cascade County and City of Great Falls. These CDPs have populations with higher percentages of some minority groups.

2.4. Age Distribution

Table 5 depicts the change in total population and age composition for Cascade County and the City of Great Falls since 1980. Three age categories (residents less than 18 years old, residents 18 to 64 years old, and residents over age 65) were considered in the analysis of age distribution.

Table 5: Age Distribution (1980 to 2010)

Year	Cascade County				City of Great Falls			
	<18 Years	18-64 Years	65+ Years	Median Age	<18 Years	18-64 Years	65+ Years	Median Age
1980	23,544	49,164	7,988	28.6	15,713	34,489	6,523	30.6
1990	21,520	46,304	9,867	32.7	14,325	32,507	8,265	34.4
2000	20,912	48,197	11,248	36.7	14,138	33,654	8,898	37.8
2010	18,630	50,007	12,690	38.9	13,161	35,648	9,696	39.0
Change (1980-2010)	**-4,914**	**843**	**4,702**	**10.3**	**-2,552**	**1,159**	**3,173**	**8.4**
	-20.9%	***1.7%***	***58.9%***	***36.0%***	***-16.2%***	***3.4%***	***48.6%***	***27.5%***

Source: US Bureau of the Census, Census of the Population

As discussed earlier, the County's population showed only a slight net increase in residents between 1980 and 2010 and the City's population increased by about 3.1 percent over the same period. Between 1980 and 2010, the share of County residents in the "less than 18 years old" category has decreased by nearly 21 percent, while the number of residents in "65 years and over" category increased by nearly 59 percent. During the same time period, the number of City residents in the "less than 18 years old" category decreased by about 16 percent, while the number of residents in "65 years and over" category increased by nearly 49 percent. The median ages of both County and City residents showed notable increases between 1980 and 2010. The median ages of County and City residents were 38.9 years and

39.0 years, respectively, at the time of the 2010 Census. These statistics point to the aging of the population, and corresponds to similar trends within Montana and the United States.

To examine more specifically how age groups have changed in Cascade County, age group data from the 2000 Census and 2010 Census were reviewed for the County and the City of Great Falls. This review showed the following changes:

- Notable (12-23 percent) declines in the population between 5 to 17 years;
- Declines of nearly 30 percent in the 35- to 44-year old population;
- The share of the population between 55 and 64 years increased by 30-50 percent; and
- The population over the age of 65 (including the share of residents over age 85) grew substantially.

2.5. Disability Status

The 2012-2016 ACS 5-Year Estimate for Cascade County and the City of Great Falls was reviewed to obtain information about the number of residents with disabilities (which include hearing or vision difficulties, cognitive difficulties, and ambulatory difficulties). This information is important to review since segments of the population with disabilities may require special accommodations for transport or unique considerations in the design of transportation infrastructure.

The ACS data for the 2012-2016 period showed that approximately 15 percent of the civilian non-institutionalized populations of both the County and City were considered to have one or more disabilities. The City of Great Falls generally has a similar percentage of people with disabilities as Cascade County, however in most cases, the proportion is slightly higher in the City than the County. The data indicates the following for disabled residents of the County and City:

- About 4 percent of residents under the age of 18 had one or more disabilities;
- Roughly 13 percent of the residents between 18 and 64 years had one or more disabilities; and
- Approximately 39 percent of residents 65 years and older had one or more disabilities.

2.6. Personal Travel and Commuting Characteristics

According to the ACS profile for the 2012-2016 period, approximately 92 percent of residents in occupied housing units within the City of Great Falls and Cascade County had access to at least one vehicle. In comparison, residents of nearly 95 percent of all occupied housing units in Montana and 91 percent of all occupied housing units in the nation had access to one or more vehicles.

Information about the number of workers (16 years and older) and their commuting characteristics is also available from the ACS. The ACS information provided estimates of the total share of workers who commute or work at home, the transportation modes used by commuters, and the mean travel times to work for commuters. **Table 6** presents commuting characteristics for workers in Cascade County, the City of Great Falls, and the Malmstrom AFB and Black Eagle CDPs. Similar statistics for the State of Montana and the United States are provided for comparison.

Table 6: Mode of Transportation to Work (2012-2016)

Subject	City of Great Falls	Cascade County	Malmstrom AFB CDP	Black Eagle CDP	State of Montana	United States
Number of Workers 16 Years and Older	**28,186**	**38,785**	**2,239**	**450**	**483,881**	**145,861,216**
% Who Commuted to Work	97.30%	96.90%	96.70%	100.00%	93.70%	95.40%
% Who Worked at Home	2.70%	3.10%	3.30%	0.00%	6.30%	4.60%
Transportation Mode						
Drove alone, car, truck, van	82.00%	80.40%	76.70%	76.20%	75.10%	76.40%
Carpooled	10.30%	11.10%	14.70%	10.20%	10.20%	9.30%
Public Transportation (excluding taxicabs)	0.80%	0.80%	0.00%	6.90%	0.80%	5.10%
Walked to Work	3.10%	3.50%	4.70%	0.00%	5.1%	2.80%
Other means of commuting	1.10%	1.10%	0.60%	6.70%	2.40%	1.80%
Mean Travel Time to Work	**13.8 min**	**15.6 min**	**14.0 min**	**13.0 min**	**17.9 min**	**26.1 min**

Source: US Bureau of the Census, American Community Survey (ACS) Profile Report 2012-2016 Estimates, available at http://mcdc1.missouri.edu/acsprofiles/acsprofilemenu.html

The table shows that approximately 92 percent of the commuting workers in Cascade County and City of Great Falls rely on personal vehicles or carpools for transportation to work destinations. The share of workers who drove alone to work is higher that seen for the state and nation. The share of workers who walked to work or used other means to commute is also below that seen for Montana and the US. The data also indicates that public transportation options are limited for Montana residents at all geographies as compared to elsewhere in the United States. Workers in Cascade County and the City also have notably shorter commute times than elsewhere in the state or nation.

3.0 HOUSING UNITS AND HOUSEHOLDS

The Census Bureau identifies a “housing unit” as a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements. A “household” includes all the persons who occupy a housing unit according to the Census Bureau definition. For purposes of allocating future residential growth, housing units are of interest since they are inputs to the travel demand model.

3.1. Number of Housing Units

Table 7 lists the number of housing units that existed within the various geographies of Cascade County during recent decennial censuses. Overall, the number of housing units in Cascade County increased by nearly 16 percent during the 1980-2010 period, with significant increases in the number of housing units recorded during each of the last two decades in the County. This trend is similar for the City of Great Falls which showed an 11.6 percent increase in housing units between 1980 and 2010.

Table 7: Number of Housing Units (1980-2010)

Area	1980	1990	2000	2010
Cascade County				
Population	80,696	77,691	80,357	81,327
Housing Units	32,199	33,063	35,225	37,276
Net Change	--	864	2,162	2,051
Population per Housing Unit	2.51	2.35	2.28	2.18
City of Great Falls				
Population	56,725	55,097	56,690	58,505
Housing Units	24,056	24,152	25,243	26,854
Net Change	--	96	1,091	1,611
Population per Housing Unit	2.36	2.28	2.25	2.18
Malmstrom AFB CDP				
Population	6,675	5,938	4,544	3,472
Housing Units	1,566	1,496	1,405	1,171
Net Change	--	-70	-91	-234
Population per Housing Unit	4.26	3.97	3.23	2.96
Black Eagle CDP				
Population	[a]	[a]	914	904
Housing Units	[a]	[a]	458	474
Net Change	--	--	--	16
Population per Housing Unit	--	--	1.99	1.91

Source: US Bureau of the Census, Census of the Population
[a] No data available

Several other trends are obvious from the housing unit data presented in **Table 7**:

- The County has seen an increase of more than 4,200 housing units over the last 20 years, with 64 percent of these housing units being added within the City of Great Falls.
- The number of housing units in the Malmstrom AFB CDP has decreased by nearly 25 percent over the period.

3.2. Population Per Housing Unit

The data in **Table 7** shows that the population per housing unit decreased for all geographies between 1980 and 2010. The population per housing unit in Cascade County and the City of Great Falls was identical at 2.18 persons per housing unit at the time of the 2010 Census. The population per housing unit for the State of Montana was 2.04 according to the 2010 Census.

Because not all housing units are occupied, it is interesting to consider the number of residents per occupied housing unit. At the time of the 2010 Census, more than 90 percent of the housing units in the County were occupied and more than 94 percent of those in the City of Great Falls were occupied. If only occupied housing units are considered, the resulting population per housing unit rates are 2.41 people per unit in the County and 2.31 people per unit in the City. Comparable rates for 2010 in the Malmstrom AFB and Black Eagle CDPs were determined to be 4.04 and 2.12 persons per unit, respectively.

4.0 EMPLOYMENT AND INCOME TRENDS

Cascade County is Montana's fifth most populous county, while Great Falls, the county seat, is the state's third largest city. Great Falls accounts for about 72 percent of Cascade County's total population. The city is home to Malmstrom AFB which is a driving force in the regional economy. Great Falls is also home to the C. M. Russell Museum, the Lewis & Clark Interpretive Center, Great Falls College Montana State University, and associated College of Technology.

4.1. Historic Employment in Cascade County

Employment by industry for Cascade County for milestone years between 1970 and 2015 is represented in **Table 8**. The most recent available data shows that total full and part-time employment in the county was 50,348 in 2015, 98 percent of which were non-farm related employment. Total full and part-time employment in Cascade County grew at an annual rate of approximately 0.70 percent.

The data in **Table 8** shows that between 1970 and 2015, the most notable net increases in employment occurred in the services industry, where the total number of jobs more than tripled. Other industry sectors showing sizable increases in employment since 1970 include: construction (net gain of 1,117 jobs); finance, insurance and real estate (net gain of 1,407 jobs); and state and local government (net gain of 935 jobs). Notable declines in employment were seen in the manufacturing, transportation and public utilities sector, federal and civilian government, and military. Combined, the declines in these sectors resulted in more than 5,000 fewer jobs in 2015 than in 1970.

Malmstrom AFB accounts for the majority of the military employees in Cascade County. Total full and part-time military employment in 1970 accounted for 15.5 percent of jobs in the County. Military employment in the county has steadily declined since 1970. There were 2,319 fewer military jobs in 2015 than in 1970. Total full and part-time military employment represented about 7 percent of jobs in the County in 2015. Most recently, military job losses resulted after a 2007 decision by the United States Air Force to deactivate the 564th Missile Squadron from its existing mission at Malmstrom.

Table 8: Historical Employment Trends for Cascade County (1970–2015)

Employment	1970	1980	1990	2000	2010	2015	Growth Rate (1970-2015)
Total Full/Part time Employment	**37,297**	**42,836**	**43,160**	**47,944**	**50,017**	**50,348**	**0.67%**
Farm Employment	1,328	1,039	1,036	1,209	1,114	1,153	-0.31%
Non-Farm Employment	35,969	41,797	42,124	46,735	48,903	49,195	0.70%
Employment by Industry							
Agricultural Services & Forestry	134	159	352	[a]	159	175	0.59%
Mining	55	60	66	[a]	130	205	2.97%
Construction	2,114	2,211	1,837	2,654	3,249	3,231	0.95%
Manufacturing	2,920	1,659	1,244	1,425	1,082	1,437	-1.56%
Transportation & Public Utilities	2,216	2,193	2,165	2,052	1,583	1,676	-0.62%
Wholesale Trade	1,758	3,193	2,347	1,917	1,474	1,587	-0.23%
Retail Trade	6,266	7,697	8,571	10,048	6,117	6,179	-0.03%
Finance, Insurance & Real Estate	2,785	3,804	3,119	4,042	4,875	4,192	0.91%
Services	6,497	10,264	12,000	14,736	20,581	21,345	2.68%
Federal & Civilian Government	2,315	1,773	1,780	1,532	1,858	1,643	-0.76%
Military	5,785	4,989	4,726	3,881	3,583	3,466	-1.13%
State & Local Government	3,124	3,795	3,917	3,869	4,212	4,059	0.58%

Source: US Department of Commerce Bureau of Economic Analysis – Table CA25 and Table CA25N.
[a] Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

4.2. Employment Trends by Industry

Table 9 presents data on the estimated number of civilian employees (age 16 years and older) and the industries in which they are employed in Cascade County, the City of Great Falls, and the Malmstrom AFB and Black Eagle CDPs. The data in the table, taken from 2012-2016 ACS profile, also includes employment estimates by industry. It is important to recognize that the employment numbers shown in **Table 9** do not account for military employment in the Cascade County or its various other geographic subdivisions. It is also worth noting that all ACS data are survey estimates with varying margins of error. Many of the employment numbers presented for the Malmstrom AFB and Black Eagle CDPs are considered "statistically suspect" due to their margins of error. *The Malmstrom AFB Joint Land Use Study Final Report* released in March 2012 states that total employment at the Base (excluding dependents) was 4,524, composed of 3,149 military and 1,375 civilian (appropriated, non-appropriated, contract, and private business) personnel.

The employment by industry data from the 2012-2016 ACS for the various geographies of Cascade County supports the information presented in **Table 8**. The majority of the employment in the County and City is associated with the services industry, followed by retail trade and construction industries.

A recent publication in the Great Falls Tribune (March 2016) identifies the largest civilian employers in the City and County:

- Benefis Hospital (3,107 employees)
- Great Falls Public Schools (2,048 employees)
- City of Great Falls (575 employees)
- Great Falls Clinic (541 employees)
- Cascade County (500 employees)

Table 9: Civilian Employment by Industry (2012-2016)

Subject	Cascade County		City of Great Falls		Malmstrom AFB CDP		Black Eagle CDP	
Agriculture, forestry, fishing, hunting, and mining	1,129	3.1%	486	1.8%	0	0.0%	0	0.0%
Construction	2,490	6.8%	1,813	6.6%	4	0.5%	16	3.6%
Manufacturing	1,182	3.2%	861	3.1%	6	0.8%	40	8.9%
Wholesale Trade	900	2.4%	647	2.3%	10	1.3%	0	0.0%
Retail Trade	4,700	12.8%	3,654	13.3%	71	9.1%	106	23.6%
Transportation, warehousing, and public utilities	1,945	5.3%	1,347	4.9%	11	1.4%	21	4.7%
Information	663	1.8%	563	2.0%	6	0.8%	0	0.0%
Finance and Insurance, and real estate and rental and leasing	2,472	6.7%	1,964	7.1%	44	5.7%	9	2.0%
Professional, scientific, management and administrative	2,742	7.5%	2,184	7.9%	44	5.7%	0	0.0%
Education services, health care, and social assistance	9,535	25.9%	7,346	26.7%	204	26.3%	99	22.0%
Arts, entertainment, and recreation, and accommodation, and food services	4,445	12.1%	3,494	12.7%	149	19.2%	91	20.2%
Other services, except public administration	1,925	5.2%	1,396	5.1%	4	0.5%	19	4.2%
Public administration	2,630	7.2%	1,792	6.5%	223	28.7%	49	10.9%
Total Employed Population 16 yrs and over		**36,758**		**27,547**		**776**		**450**

Source: US Bureau of the Census, American Community Survey (ACS) Profile Report 2012-2016 Estimates, available at http://mcdc1.missouri.edu/acsprofiles/acsprofilemenu.html

4.3. Unemployment Rates

Unemployment rates are represented in **Table 10** and are current as of November 2017. The data shows an unemployment rate for Cascade County equal to that for the United States and slightly lower than that for the State of Montana (3.9 versus 4.1 percent). Corresponding unemployment information for the City of Great Falls is unavailable.

Table 10: Employment Statistics (2017)

Area	Total Labor Force	Employed	Unemployed	Unemployment Rate
Cascade County	38,145	36,648	1,497	3.90%
State of Montana	523,574	502,296	21,278	4.10%
United States	160,466,000	154,180,000	6,286,000	3.90%

Source: MT Department of Labor and Industry, Research and Analysis Bureau – Labor Force Statistics, November 2017 (data is not seasonally adjusted).
[(a)] US Bureau of the Census, American Community Survey (ACS) Profile Report 2012-2016 Estimates

4.4. Income Levels

Estimates of median household income and per capita income for Cascade County, the City of Great Falls, and other geographies are available in the 2012-2016 ACS profile and are shown in **Table 11**. The ACS shows estimated median household incomes for in Cascade County and the City of Great Falls as $45,469 and $43,497, respectively. ACS median household income estimates for the Malmstrom AFB and Black Eagle CDPs were $47,500 and $ 28,179, respectively. Median household income levels for all geographies in Cascade County were below the median household income for the State of Montana

($48,380). In general, households within Cascade County earn about 6 percent less than what is earned by an average Montana household. Cascade County's median household income was about 87 percent of that estimated for the nation ($55,322). Similar relationships exist when reviewing per capita income levels in Cascade County and the City of Great Falls. The per capita income levels for all geographies in the County are below those seen for the state and nation.

Estimates of per capita personal income for 2016 are available from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA) for the nation, states, counties, and other selected geographies. Personal income is the income received by all persons from all sources. Per capita personal income is calculated as the total personal income of the residents of an area divided by the population of the area. BEA data for 2016 shows that Cascade County's estimated per capita personal income is above that for the state but below that of the nation.

Table 11: Income Levels (2012-2016)

Area	Median Household Income	Per Capita Income	2016 Per Capita Personal Income
United States	$55,322	$29,829	$49,246
State of Montana	$48,380	$27,309	$42,947
Cascade County	$45,469	$26,578	$43,375
City of Great Falls	$43,497	$26,369	--
Malmstrom AFB CDP	$47,500	$20,172	--
Black Eagle CDP	$28,179	$18,887	--

Source: US Bureau of the Census, American Community Survey (ACS) Profile Report 2012-2016 Estimates and U.S. Department of Commerce, Bureau of Economic Analysis (BEA).

4.5. Poverty Status

Table 12 presents poverty statistics for various geographies in Cascade County and comparable statistics for the State of Montana and the nation.

Table 12: Poverty Status (2012-2016)

Area	Persons Living in Poverty (%)	Persons Under 18 in Poverty (%)	Persons over 65 in Poverty (%)
United States	15.1	21.2	9.3
State of Montana	14.9	18.6	8.5
Cascade County	14.7	20.9	8.1
City of Great Falls	16.1	23.6	7.9
Malmstrom AFB CDP	3.2	3.6	0.0
Black Eagle CDP	22.4	24	35.7

Source: US Bureau of the Census, American Community Survey (ACS) Profile Report 2012-2016

According to the 2012-2016 ACS profile, the number of residents living below the poverty line was higher for the City of Great Falls than for the State and Cascade County. About 14.9 percent of all individuals living in Montana were estimated to be below the poverty line. The ACS estimates show 14.7 percent and 16.1 percent of the individuals living in Cascade County and City of Great Falls, respectively, were living in poverty.

The ACS data also shows the County and City likely had a greater percentage of persons under the age of 18 living in poverty than seen for the state and nation. However, the share of persons over the age of 65 living in poverty is likely lower than seen at the state and national level.

Note the poverty statistics shown for the Malmstrom AFB and Black Eagle CDPs are considered "statistically suspect" due to their margins of error.

5.0 EXISTING LAND USE AND DEVELOPMENT

Land use plays a critical role in shaping transportation networks. Land use decisions affect the transportation system and can increase viable options for people to access work and recreation sites, goods, services, and other resources in the community. In turn, the existing and future transportation system may be impacted by the location, type, and design of land use developments through changes in travel demands, travel mode choices, and travel patterns.

5.1. Existing Land Use and Development

The City of Great Falls was built on a grid system of streets with a defined Central Business District surrounded by residential development. Commercial and industrial uses were typically concentrated in the Central Business District or along railroad lines or major roads and streets. The community has evolved over the years as population growth and new development has been realized. Commercial development is no longer focused on the downtown area and many retail functions have shifted to outlying shopping centers and commercial areas, like those along Tenth Avenue South and Third Street Northwest. Today, downtown Great Falls is the governmental and financial center of the community and houses many professional offices and specialty retail stores.

Extensive residential uses are still seen in the areas around the central City. However, the residential development pattern has extended to the fringe areas surrounding the City and is characterized by low-density residential development on lots of one to ten acres. Multiple family residential development is widely scattered throughout the community. Most new housing development in the Great Falls area has occurred to the southwest, southeast, and north of the city.

The City's current Growth Policy indicates "increased reliance on trucking has allowed manufacturers and other types of industries to locate wherever land is available with good access, adequate utilities, and proper zoning." It is no longer necessary for industrial land uses to be located near railroad lines. As a result, few substantial concentrations of new industrial development occur within the city proper. However, concentrations do occur in the North Park industrial subdivision and near the Great Falls International Airport.

Figure 1 illustrates current land uses in the City of Great Falls. A breakdown of current land uses by type is also provided for reference in **Table 13**.

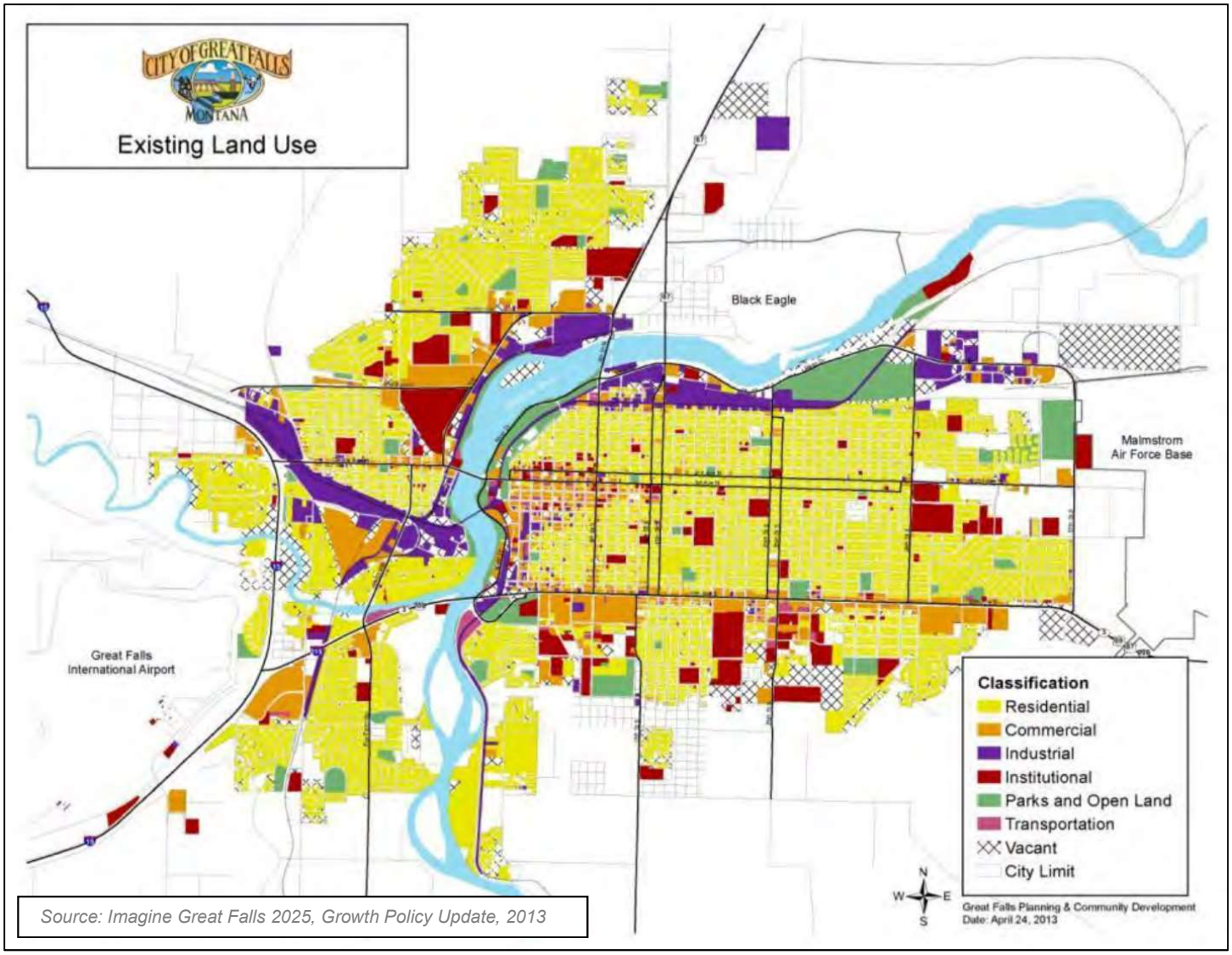

Figure 1: Existing Land Use

Table 13: Existing Land Uses (2012)

Classification	Uses	Acres	Percent
Residential	Single, multifamily, mobile home, retirement	4,318	39%
Commercial	Retail, shopping center, FIRE, Hotel/Motel, Commercial with residential, child care	1,004	9%
Industrial	Light and heavy	1,276	12%
Institutional	Government, education, church, semi public	2,114	19%
Open Land	Green space	731	7%
Transportation	Public, private parking, ROW, RR and utilities	91	1%
Vacant	Commercial and residential	1,534	14%
Total		**11,068**	

Source: Imagine Great Falls 2025, Growth Policy Update, 2013

5.2. Recent Development Trends and Future Growth Areas

A map showing how the land area of the City of Great Falls has expanded between 1962 and 2012 is presented in **Figure 2**. The incorporated area of the City has increased by more about 9.3 square miles over the past 50 years and now encompasses more than 22.5 square miles of land. As **Figure 2** shows, the city has grown around most of its periphery. Notable areas where expansion has occurred include along the southern of expansion exist along the southern perimeter of the city and to the southwest near Great Falls International Airport. Infill development has occurred to the east between the city and Malmstrom AFB and north of the Missouri River along US Highway 87 and Black Eagle.

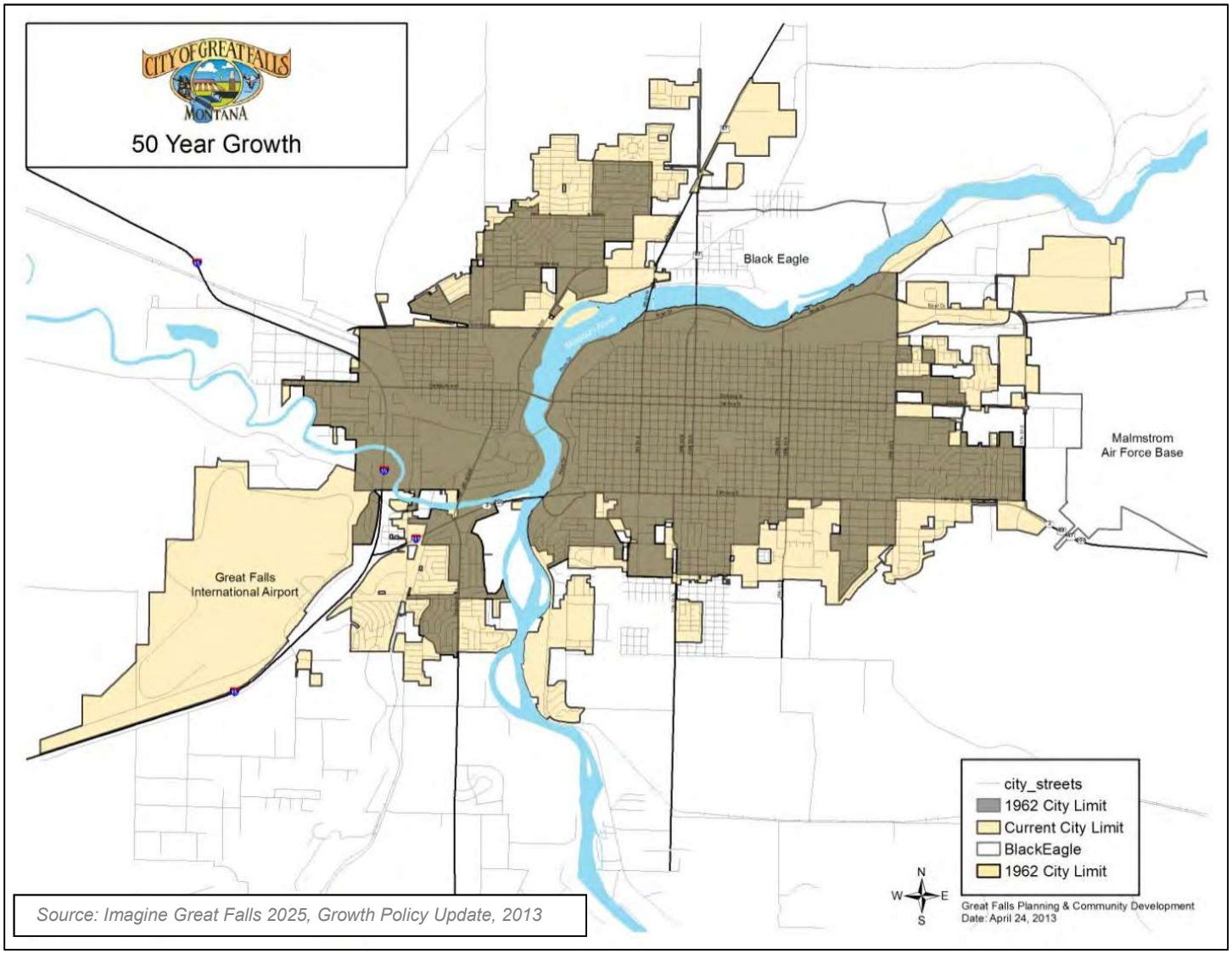

Figure 2: City Expansion Since 1962

Numerous special area plans have been produced in Great Falls in recent years which help identify development goals and objectives and contain detailed evaluations of localized areas within the community. These plans are listed below:

- Downtown Access, Circulation, and Streetscape Plan (April 2013)
- Malmstrom AFB Joint Land Use Study (March 2012)

- Downtown Master Plan (October 2011)
- Medical District Master Plan (January 2007)
- Missouri River Urban Corridor Master Plan (2004)

The City recently updated its growth policy through the *Imagine Great Falls 2025* project. As part of this effort, potential growth areas within the community were identified. These growth areas are shown on **Figure 3**. The principal areas for new residential growth are envisioned along the southern edge of the city in the southwestern portion of the community. Residential growth is also anticipated along the northern perimeter of the city west of US Highway 87. Non-commercial development and industrial growth are envisioned around the airport, east of US Highway 87 and north of Black Eagle, and in the northeastern portion of the urban area near Malmstrom AFB.

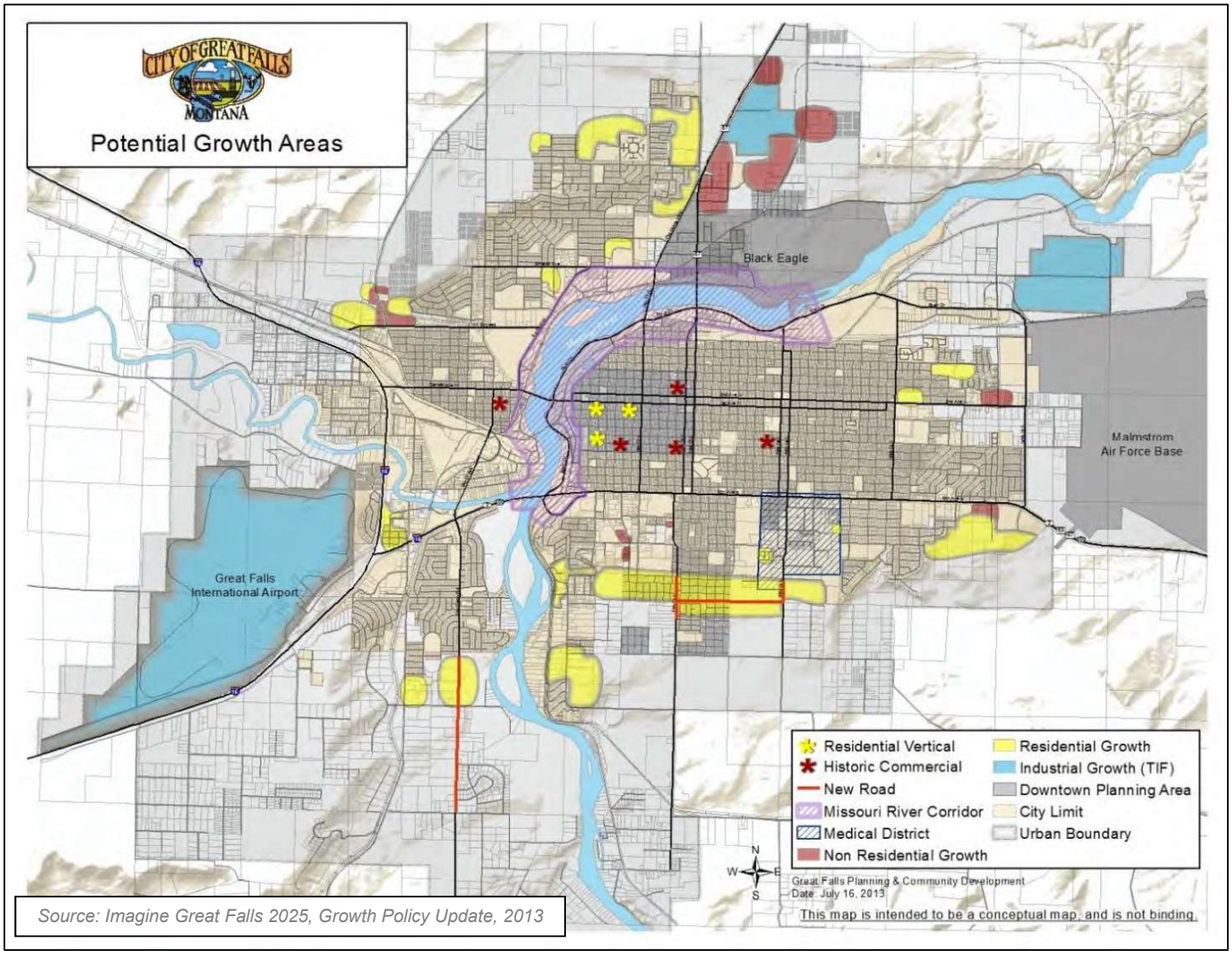

Figure 3: Potential Growth Areas

6.0 FUTURE PROJECTIONS

Projections are estimates of various characteristics at future dates. They illustrate reasonable estimates of future conditions based on assumptions about current or expected trends. Population and employment projections, in the form of housing units and total jobs, are used to help predict future travel patterns and assess the performance of the transportation system.

6.1. Population and Housing Projections

County level population projections are available from Montana Department of Commerce Census & Economic Information Center (CEIC)[1]. The CEIC projections were developed by Regional Economic Models, Inc. (REMI) and provide complete annual demographic forecasts through 2060 for the State of Montana and each county. The REMI model predicts a future population of 96,327 for Cascade County in the year 2038. The future projection in the REMI model was determined reasonable and was therefore used as the 2038 projected population for the LRTP. Similar projections are not available from the CEIC for the City or CDP areas.

The share of the population living within the LRTP study area, as compared to the County, was estimated using Census population data. GIS analysis was used to identify the total population within all census blocks entirely within or crossed by the study area boundary. This analysis established the study area population to be 68,967 in 2010. The population of the LRTP study area accounts for approximately 85 percent county's total population. The percent distribution of the county's population within the Great Falls study area was then carried forward for future projections, being held constant through the year 2038.

More so than population totals, the number of housing units is a key component in the travel demand model. Housing units distribute people throughout the network to given locations. They represent the population and act as a hub for traffic within the network. Having an accurate value for number of people per housing unit helps distribute the traffic more accurately. However, it is often quite difficult to accurately represent the population through housing units. This is in part because the number of people per housing units varies based on location and can change at any time.

According to the 2010 Census, Cascade County had a population of 81,327 people distributed among 37,276 housing units, resulting in an overall occupancy rate of about 2.18 people per housing unit. Within the study area, the 2010 Census showed a population of 68,967 people among 30,933 houses, resulting in an occupancy rate of 2.23. The occupancy rates for housing units in the County and in the study area were held constant for population and housing projections through 2038.

Since housing units are an important factor in travel demand modeling, the 2015 travel demand model uses housing units as inputs. It is possible to calculate the total population for 2015 by applying the occupancy rates determined by the 2010 census. This results in 83,079 people among 38,079 houses in the County, with 70,686 of those people residing in the 31,704 houses within the study area. Furthermore, applying the occupancy rates to the 2038 projected population (96,327 people) results in 44,151 houses in the County. Within the study area a population of 81,958 is forecasted with a total of 36,760 houses.

Table 14 shows population and housing unit projections for Cascade County and the study area. For the purposes of this plan, 5,827 new housing units were allocated within the study area, with an additional 1,048 housing units distributed in other areas of the county outside of the study area.

[1] Census and Economic Information Center, Montana Population Projections, Regional Economics Models, Inc., http://ceic.mt.gov/Population/PopProjections_StateTotalsPage.aspx

Table 14: Population Projections

Area	2010 (Census)	2015 (Calibrated Model)	2038 (Projection)	Net Change (2015-2038)
Cascade County Total				
Population	81,327	83,079	96,327	13,248
Housing Units	37,276	38,079	44,151	6,072
Population per Housing Unit				*2.18*
Great Falls Study Area				
Population	68,967	70,686	81,958	11,272
Housing Units	30,933	31,704	36,760	5,056
Population per Housing Unit				*2.23*
Outside Study Area				
Population	12,360	12,393	14,369	1,976
Housing Units	6,343	6,375	7,391	1,016
Population per Housing Unit				*2.18*

6.2. Employment Projections

Employment numbers are used in the travel demand model to help distribute vehicle traffic as accurately as possible within the street and road network. Places with high levels of employment will tend to generate high levels of vehicle traffic. The traffic generated is based in part on the employment type: either retail or non-retail jobs.

Employment estimates from the US BEA for Cascade County were given for the years 1970 to 2015 as discussed in **Section 4.1**. It was observed that the number of non-farm jobs within the County compounded annually at a rate of 0.70 percent since 1970. Using this growth rate, it is possible to project the number of jobs in the County out to the year 2038. Similar to the housing projections, the proportion of jobs within the study area as compared to the County is based on the 2015 travel demand model and is held constant through 2038. GIS analysis of the model determined that approximately 93 percent of the jobs in Cascade County are located within the study area.

The 2015 travel demand model also establishes the distribution of retail and non-retail jobs within the County and the study area. Retail and non-retail jobs accounted for approximately 18 and 82 percent of the total employment, respectively, in 2015. These percentages were held constant for future projections and were used to estimate the number jobs for the year 2038. Based on the historic growth rate for employment, and the breakdown of retail versus non-retail jobs, the total employment in Cascade County is projected to be 57,734 by 2038, which consists of 10,649 retail jobs and 47,085 non-retail jobs.

In order to accurately portray the traffic in the Great Falls area, the travel demand model uses a slightly different count of total jobs. The reason for this difference is due to the method in which trip rates are used in the model to distribute traffic throughout the road network. The travel demand model establishes the 2015 total employment for Cascade County at 40,402—including 7,452 retail jobs and 32,950 non-retail jobs. Again, 93 percent of the County's jobs are located within the study area which makes a total of 37,574 jobs in the study area, including 7,139 retail jobs and 30,435 non-retail jobs.

An additional 6,515 jobs (1,230 retail and 5,286 non-retail) were allocated within the study area. An additional 497 jobs were distributed in other areas of the county to account for the employment increases anticipated to occur in Cascade County by 2038. **Table 15** presents the employment projections used in the model for Cascade County and the Great Falls LRTP study area to the year 2038.

Table 15: Employment Projections

Area	2015 Estimate (US BEA)[a]	2015 Model	2038 Projection[b]	2038 Model[b]	Additional Jobs for Model (2015-2038)
Cascade County					
Total Jobs	50,348	40,402	57,734	47,414	7,012
Retail Jobs	-	*7,272*	*10,649*	*8,745*	*1,293*
Non-Retail Jobs	-	*33,130*	*47,085*	*38,669*	*5,719*
Great Falls Study Area					
Total Jobs	-	37,574	53,642	44,054	6,515
Retail Jobs	-	*7,139*	*10,126*	*8,316*	*1,230*
Non-Retail Jobs	-	*30,435*	*43,517*	*35,739*	*5,286*
Outside Study Area					
Total Jobs	-	2,828	4,091	3,360	497
Retail Jobs	-	*133*	*523*	*430*	*64*
Non-Retail Jobs	-	*2,695*	*3,568*	*2,930*	*433*

[a] *County employment statistics from US Department of Commerce Bureau of Economic Analysis – Table CA25 and Table CA25N.*
[b] *Projections calculated using 0.70% CAGR.*

7.0 ALLOCATION OF FUTURE GROWTH

Modeling of future travel patterns out to the year 2038 planning horizon using MDT's travel demand model required identification of future socioeconomic characteristics within each census block. County population and employment projections were translated into predictions of increases in housing and employment within Cascade County and the LRTP study area. To accomplish this task, the allocations made in the 2014 LRTP were used as a starting point. These allocations were based on a review of existing land use and zoning maps for the City of Great Falls and surrounding county area, City and County growth policies, and other community planning documents. These planning documents helped identify where residential, commercial and industrial development has occurred in the Great Falls area and provided information about where future residential and commercial growth is expected in the community. The allocation of future housing units and employment attempted to reflect known patterns of growth and potential new growth areas within the study area.

A land use forecasting workshop was held with representatives of the City and County as part of the 2014 LRTP. The purpose of the workshop was to discuss and reach consensus on the distribution of future housing and employment growth within the Great Falls area. This enabled local government staff to consider and revise the growth assignments as needed based on their knowledge of recent land use trends, land availability and development limitations, land use regulations, planned public improvements, and known development proposals.

Since the efforts for the 2014 LRTP were thorough and little change has occurred in the past four years, the allocations were still considered valid for the 2018 LRTP. However, projections are slightly different between the two LRTPs due to different base years and different planning horizons. To adjust for these differences, the allocations from the 2014 LRTP were modified to account for any recently completed developments and for any newly planned developments. **Figure 4** shows where future housing units are expected to be developed by the year 2038. Similarly, **Figure 5** shows where the projected increases in employment are anticipated through the year 2038.

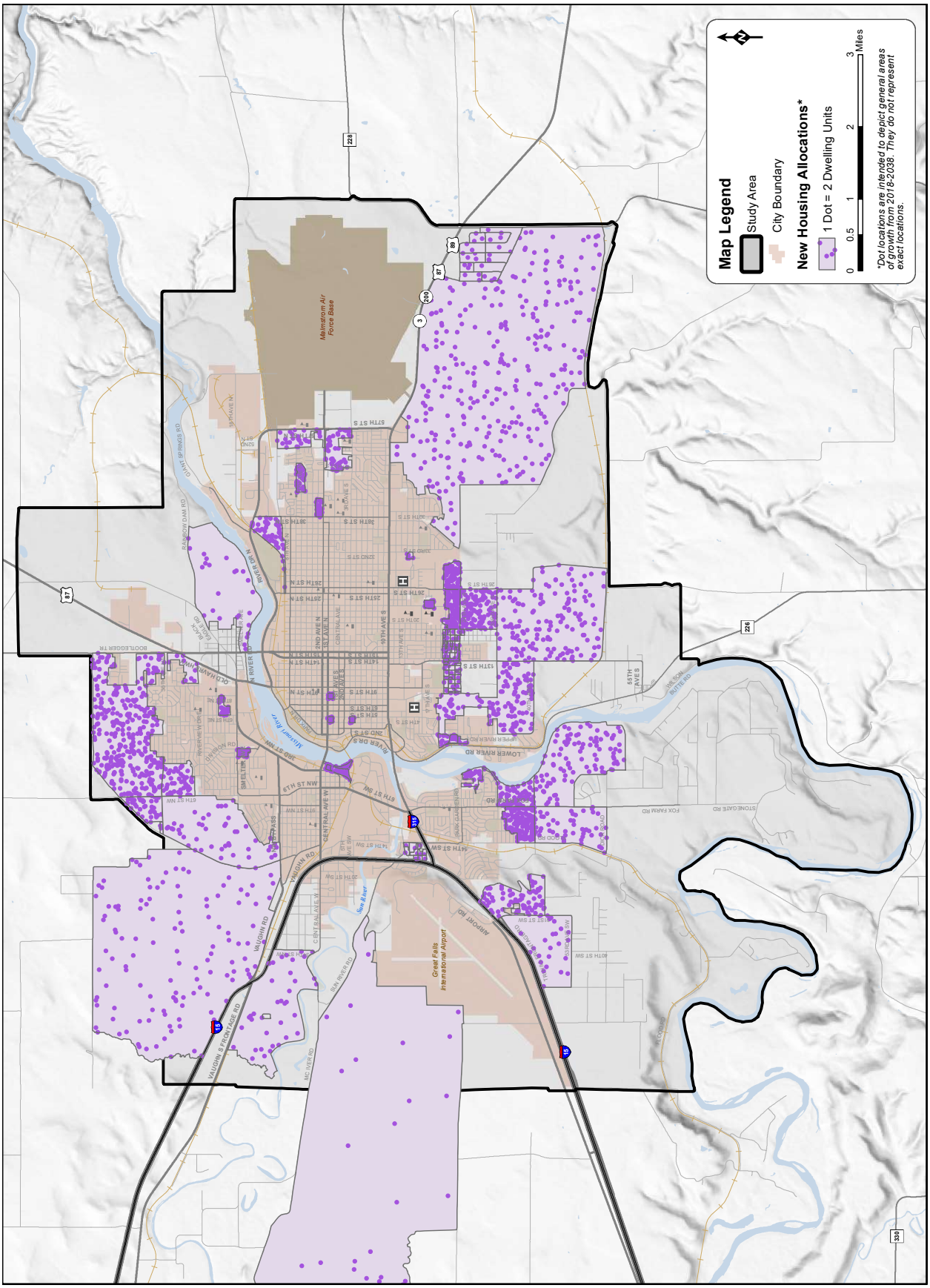

Figure 4: Future Housing Allocation

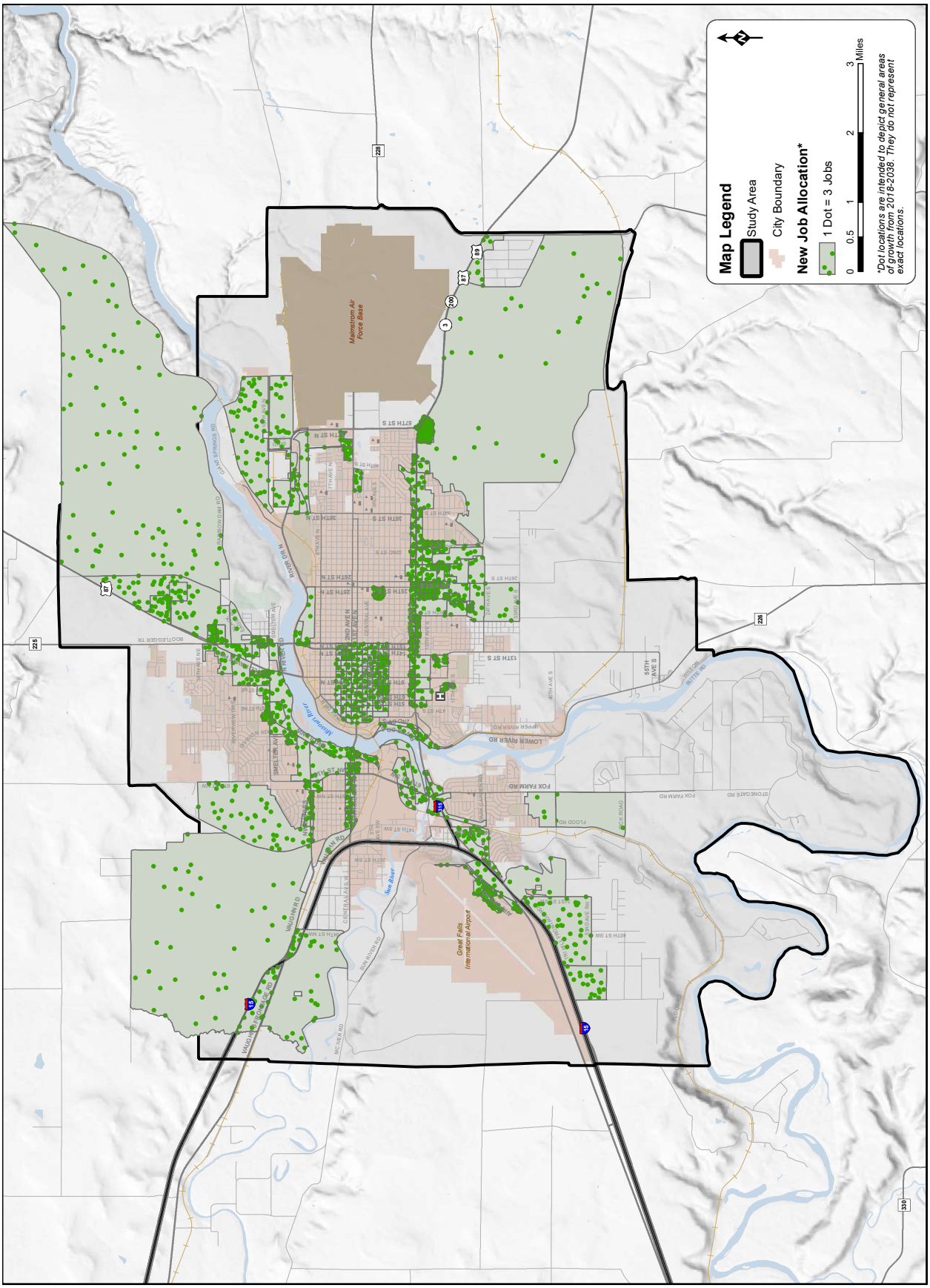

Figure 5: Future Job Allocation