

# Montana's Changing Demographics

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## 1. Introduction to Montana’s Changing Demographics

This report outlines Montana’s demographics: recent past, present, and near future in the context of research performed for the Legislative Finance Committee studies detailed in [HB 715 \(2019\)](#). In particular, it addresses the “changing economics and **demographics**” and “structural revenue challenges with economic, **demographic**, and **geographical variability** considerations.”

Studying the state’s demographic situation requires the use of high-quality data and the analysis of two primary demographic processes: aging and migration. Montana is a relatively aged state: tied for sixth highest percentage of population over age 65 with 18%, Florida and Maine are first with 20%. This report details the population aging process in Montana and how aging manifests differently in different regions of the state. With aging, and with many other population dynamics, various areas of Montana may have different experiences.



State demographics must be considered when undertaking a public finance project like that laid out in HB 715, as demographic characteristics can have important implications for both state and local revenues and expenditures. This report discusses the implications of the state’s projected demographic changes for state and local finance.

Along with aging, migration has impacted Montana’s demographics. This includes both intrastate migration (when Montana residents move within the state) and interstate migration (when Montana residents move out of the state or non-Montana residents move in to the state). This report discusses how migration flows have helped shaped demographics across Montana. As with aging, different regions of the state have had, and are projected to have, varied experiences with migration.

The remainder of this report discusses existing resources addressing demographics and public finance (Section 2), the specific research questions this report addresses (Section 3), the data and methodology used to answer these questions (Section 4), the primary findings (Section 5), and finally concludes by discussing the implications of

these findings (Section 6).

## 2. Beyond Data, Other Research

Many national studies of demographic trends exist, and some include the implications these trends have for public finance. A primary example is the Congressional Budget Office (CBO) [Long-Term Budget Outlook](#) series. The CBO projects the U.S. population to grow older between 2019 and 2049: the 65+ population will grow while the working-age population (20-64) shrinks. Thus, a larger percentage of the population will be eligible for Social Security and Medicare programs while a smaller percentage of the population contributes revenue to the funds that pay for those programs.

Several reports from the Government Accountability Office also discuss the implications of demographic change, especially aging, for government finances. One recent example is a report on the [nation’s](#)

[retirement system](#), including Social Security. The Social Security and Medicare Boards of Trustees also issue a [detailed report](#) on the status of those programs. This report discussed the importance of demographic factors for these programs in detail. There are also many academic studies on the importance of demographic change for government finances. An example focused on the implications of aging for state and local finance is [Kiewiet and McCubbins](#) (2014).

Finally, a 2012 report from the Montana State University Department of Agricultural Economics and Economics described how the composition of Montana’s population was expected to change between 2010 and 2030. The report analyzed the population in terms of three demographic age cohorts: youth, working age, and retirement age. At the time, data indicated that the population would age significantly as the baby boom generation reached retirement age. Of note is that this report was done on the heels of the great recession, a time during which migration behavior may have been non-standard.

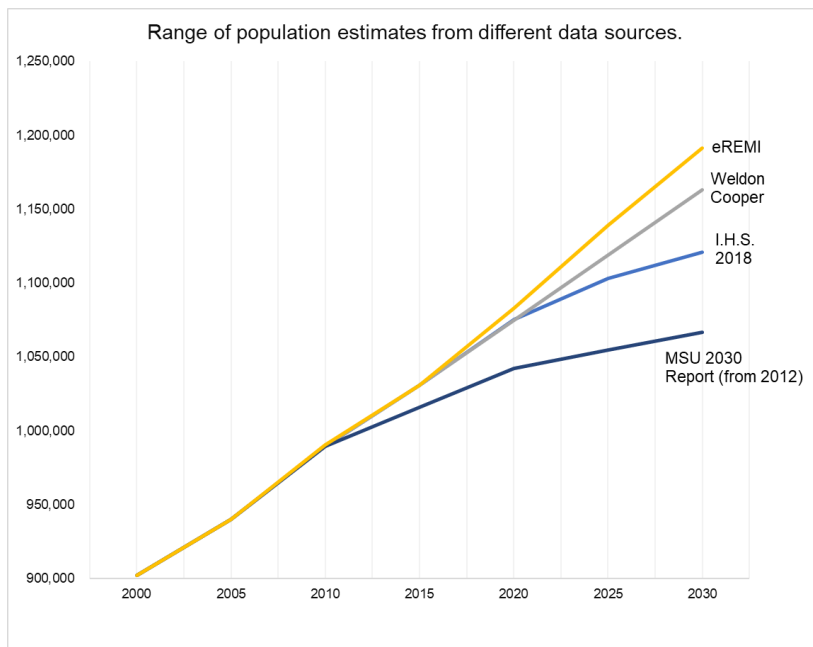
### 3. Research Questions

As a component of the study outlined in HB 715 this report addresses two related research questions: first, **what is Montana’s demographic situation?** Phrased another way, what is Montana’s demographic makeup, how did we get here, and where do we expect to be in the future? Second, **what are the implications of Montana’s demographic situation for state and local finance?** How can we expect the state’s demography to impact public finance in the near future?

### 4. Data and Methodology

Answering these research questions requires the use of a high-quality data source that enables the user to [disaggregate](#) Montana’s demographic data into local units (cities and counties). The primary dataset used

for this report was [eREMI](#) population and deaths by single year of age and county for the years 1990-2060, obtained from the Montana Department of Commerce Census and Economic Information Center (CEIC.) The eREMI dataset projection was created specifically for Montana in 2019 and takes regional patterns into account. Prior to use, the data was compared with data from [Centers for Disease Control and Prevention](#), Census, [American Community Survey](#) (ACS), [Weldon Cooper](#) and [IHS](#). The University of Virginia Weldon Cooper Center National and State population projections were used for national comparison of median age and percent of population by age



cohorts. Weldon Cooper data is widely used by state and federal entities, but is only available in 10 year increments and does not have county data available. Wealth data was based on ACS 5-year 2017

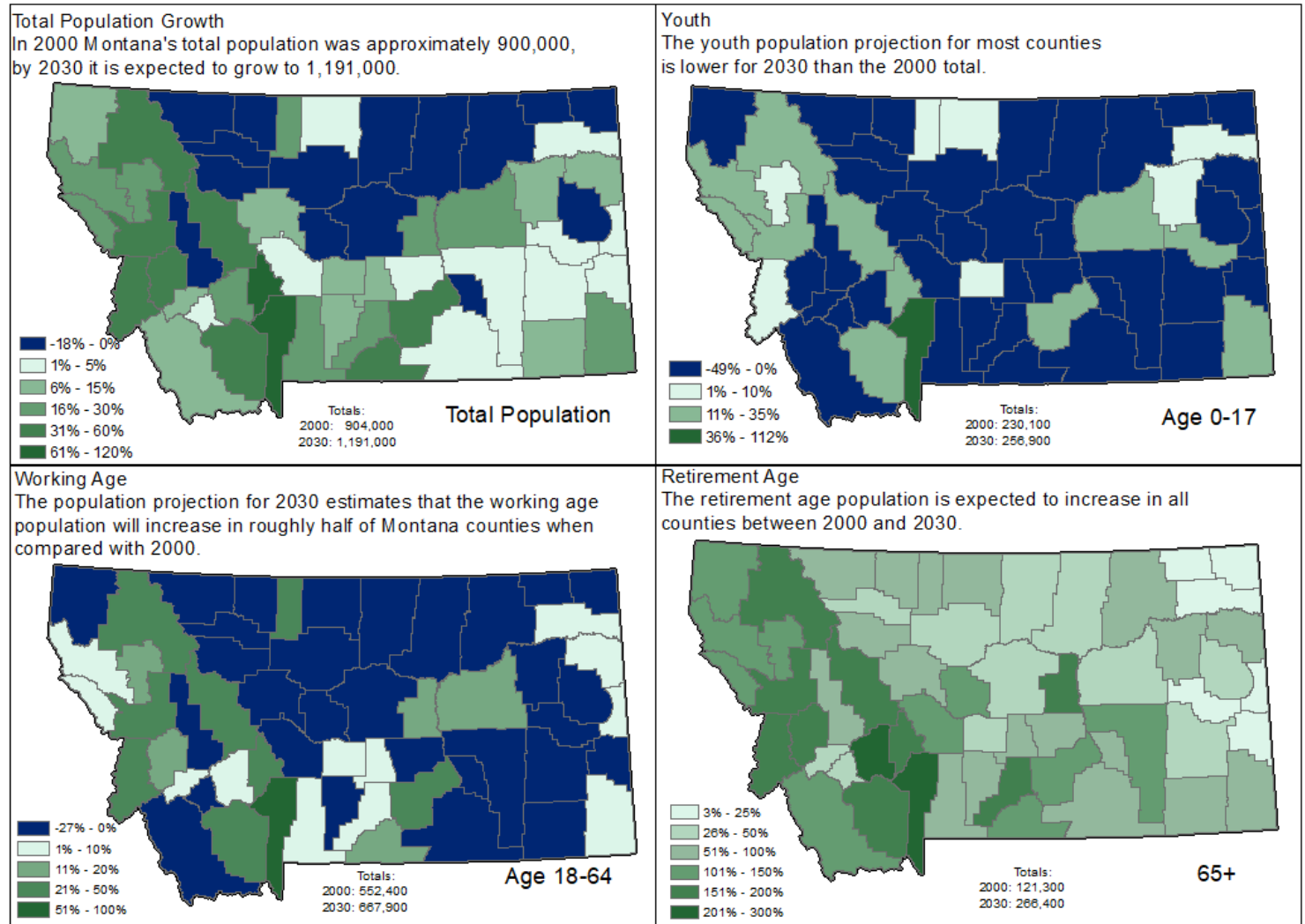
estimates of householder income by county. For the purposes of this report the population in each year was divided into 3 age cohorts:

- Youth, 0-17 years
- Working age, 18-64 years
- Retirement age, 65+

**5. Findings: More Working Montanans Living in Cities, +65s Living in Cities & Scenic Spots**

What are Montana’s current and projected demographic characteristics? There are several dimensions to the answer to this question but consider first the series of maps below<sup>1</sup>.

**Population Growth from 2000-2030 by Age Group and County**  
(Green = growth, Blue = Population loss)



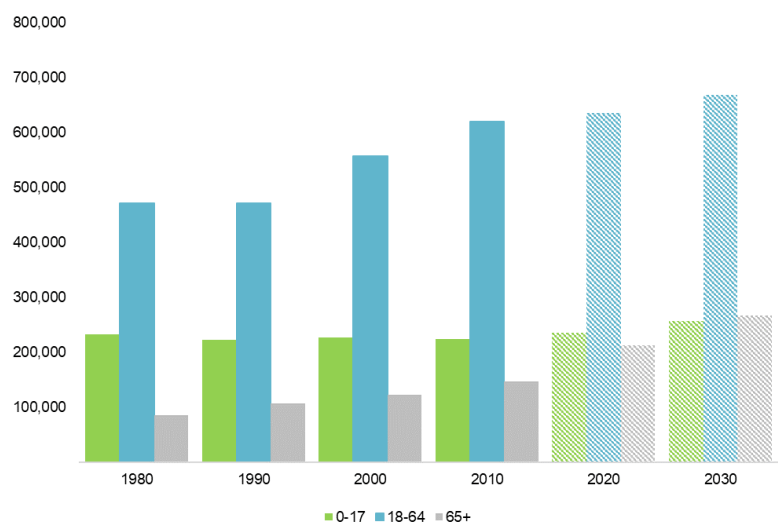
<sup>1</sup> The appendix to this report contains versions of these maps with the time periods of 2000-2015 and 2015-2030.

These maps illustrate several dynamics. First, while the state is projected to grow by about 291,000 residents between 2000 and 2030, this growth is not evenly distributed across regions or counties. The counties with larger cities and those in western Montana are expected to experience higher growth. This difference is also apparent in the projected change in youth and the working age population. The majority of Montana counties are expected to experience either negative or very low growth in their working-age population, while a handful of counties (mostly those with larger cities) are expected to experience significant growth in the working-age population<sup>2</sup>. This projected change is characteristic of continued urbanization. Finally, the retirement age population is expected to grow in every county, though it is expected to grow faster in counties with larger cities and western Montana. See the appendix for this population change data broken down for the 2000-2015 and 2015-2030 time periods.

The graph to the right breaks down the projected change in state population across three age cohorts: young (0-17), working age (18-64), and retirement age (65+).

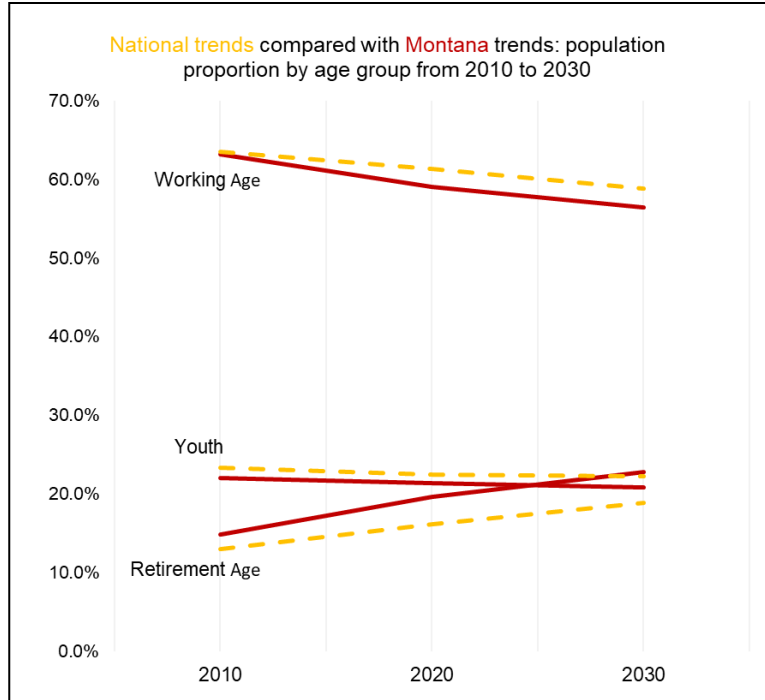
A few trends are apparent. First, the number of children in the state is projected to remain relatively flat over the next 10 years. This means that the proportion of children is expected to shrink as the state population is expected to continue to grow at about 1% per year. Second, the working-age population is expected to grow slightly over the next 10 years in raw numbers but shrink slightly in proportion. Some previous analysis had suggested the state's working-age population may shrink significantly in the future ([MSU '2030' Report, 2012](#)). Third, the state's retirement age population is projected to continue growing, both in raw numbers and in proportion.

Montana Population by age group 1980-2030: Increases in the **working** and **retirement** age populations, recovery and slight growth expected in the **youth** population

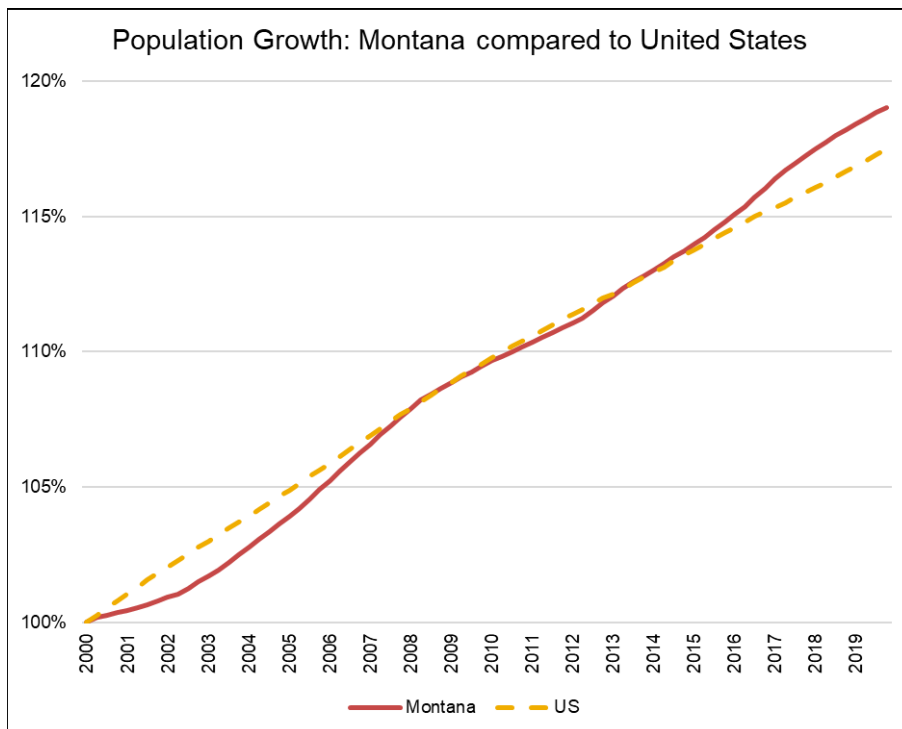


<sup>2</sup> See the [2019 Montana Labor Day Report](#) from the Department of Labor and Industry for more detail on Montana's working age population.

The graph below shows Montana and US population age cohorts as a proportion.

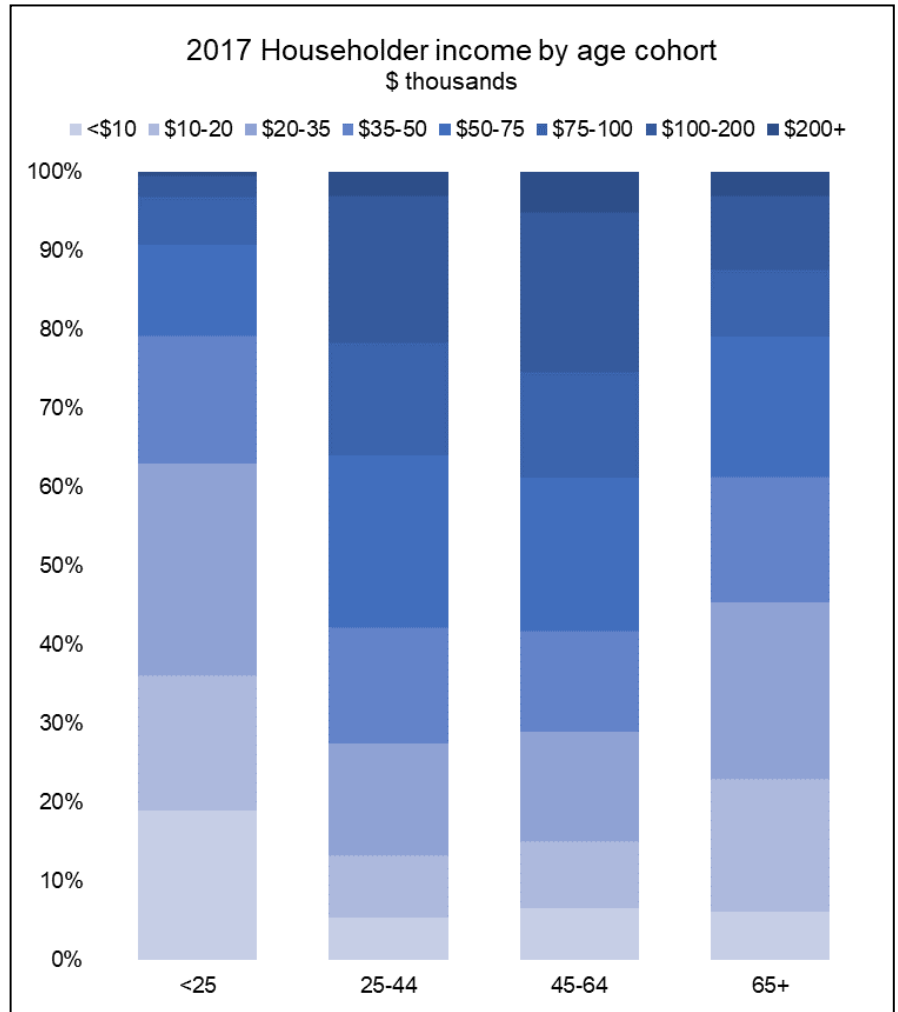


This graph illustrates several additional trends: first, the proportion of children projected in Montana's future population is about the same as the national average (very flat, as mentioned above). Second, the working age population in the U.S. is projected to shrink over time, but it is projected to shrink more quickly in Montana than the U.S. Finally, Montana's proportion of retirement age residents is higher than the U.S. average and is projected to remain higher. Montana's population growth in recent years has been significantly higher than overall U.S. growth (graph below). This is a reversal of the early 2000s when the state's population growth was lower than U.S. growth.



### 5.1.2. Income Distribution

Income is another significant demographic characteristic. LFD used income data from the U.S. Census Bureau’s American Community Survey (2017) to analyze Montana’s income distribution for this report. The graph illustrates the state’s income distribution by age cohort for 2017. The highest income cohort, on average, is the age 45-64 cohort, followed by the 25-44 cohort and the 65+ cohort. The under age 25 cohort has the lowest income, on average. Note that these figures are for householder income, not wealth. Wealth, on average, has a positive relationship with age until about age 65. See [Diaz-Giménez et. al. \(2011\)](#) for one discussion of age-cohort distributions of income and wealth.



## 5.2. Montana’s Demographics: Aging

### 5.2.1. Statewide Aging over Time

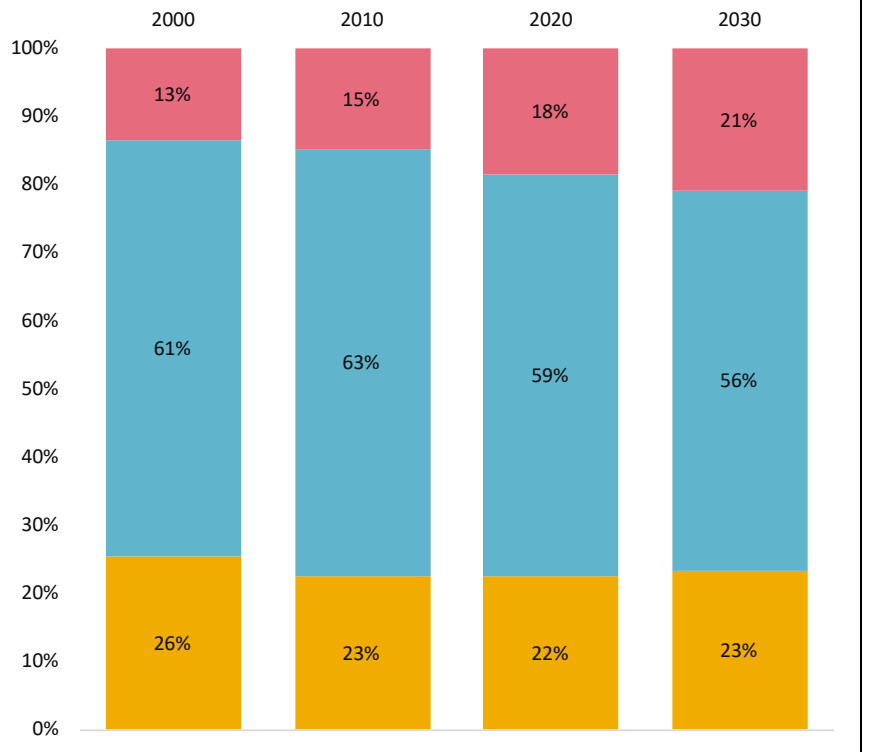
As discussed above, Montana is a relatively aged state, and is projected to continue aging. The tables on the next page illustrate the state’s aging population relative to the United States and some selected other states. Maine is currently the “oldest” U.S. state and Utah is the youngest.

	Population Proportion 65+			
	2010	2020	2030	2040
United States	13%	16%	19%	19%
Montana	15%	20%	23%	21%

	Median Age			
	2010	2020	2030	2040
United States	37.2	37.9	38.5	38.6
Montana	39.8	41.0	42.6	42.9
Maine	42.7	45.5	46.5	47.3
Utah	29.2	30.6	31.1	31.7

The graph at right shows projected change in major age cohorts in Montana as a percentage of the state population (2000-2030). As previously mentioned, the proportion of children is expected to remain relatively flat while the working age population proportion is projected to shrink. Finally, the retirement age proportion is projected to continue to grow into 2030. The implications of statewide population are discussed later in this report.

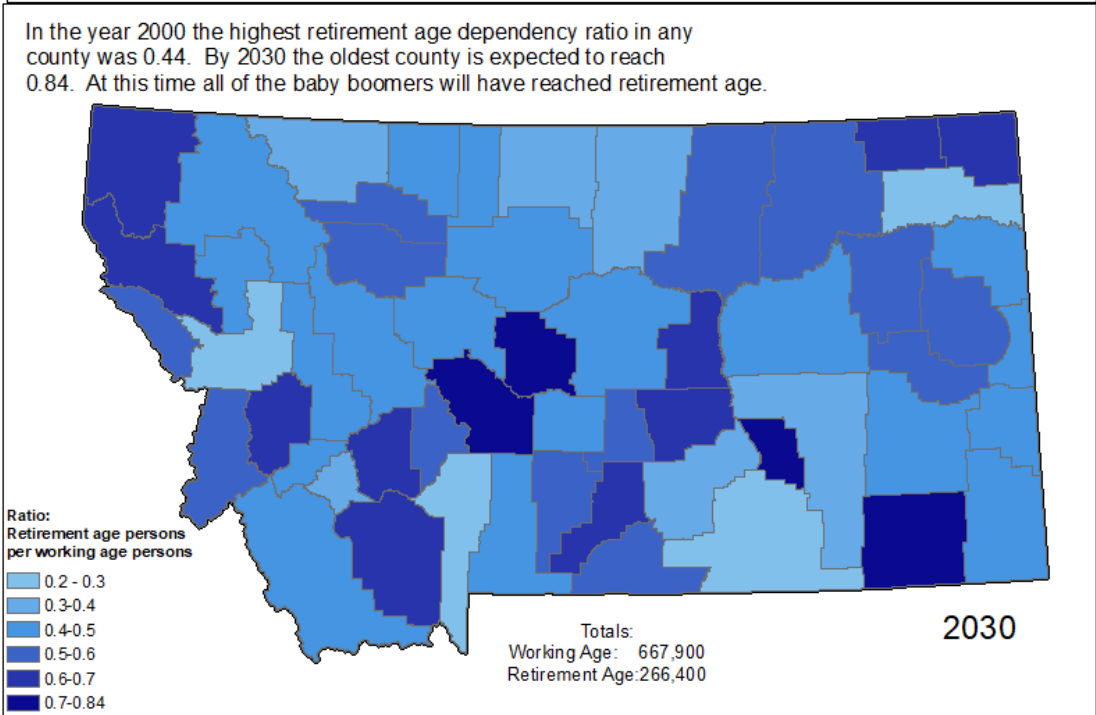
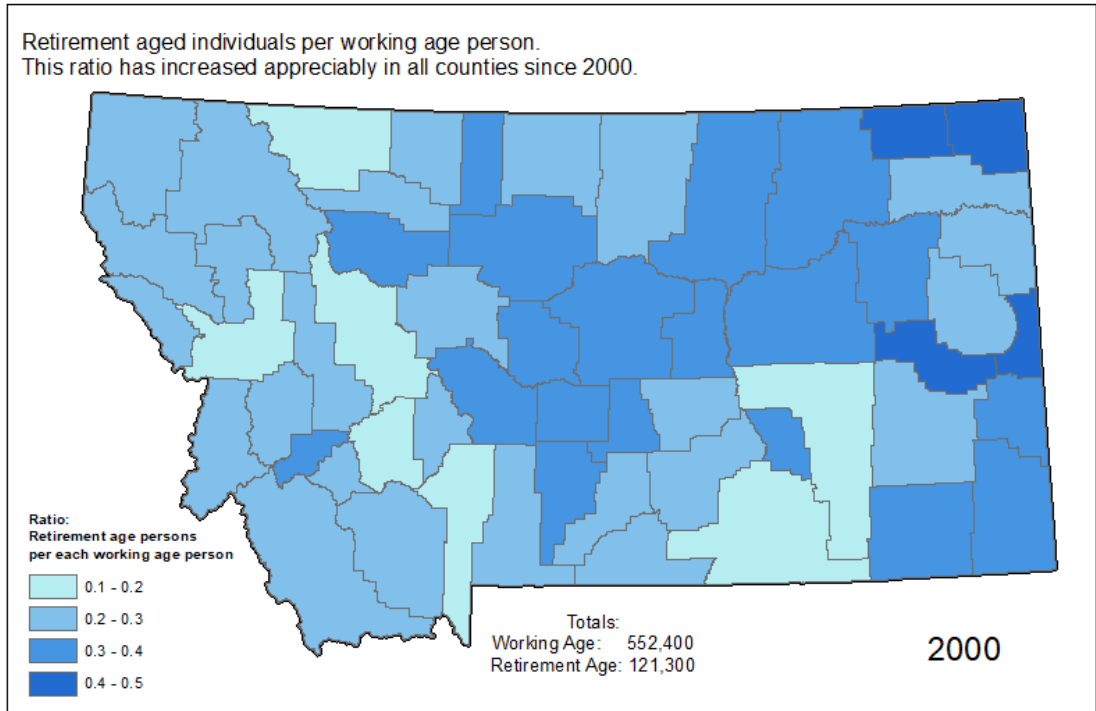
Retirement age is expected to increase as a share of population, working age is expected to decrease through 2030, and youth share of the population is expected to remain flat.





### 5.2.2. Aging by County

The maps below illustrate the retirement-age dependency ratio in Montana's counties in 2000 and 2030 (projected). The retirement-age dependency ratio is the ratio of working-age persons to retirement age persons in a given jurisdiction. A retirement-age dependency ratio of 0.3 means that for every 1 worker there is 0.3 of a retirement age person in the jurisdiction.

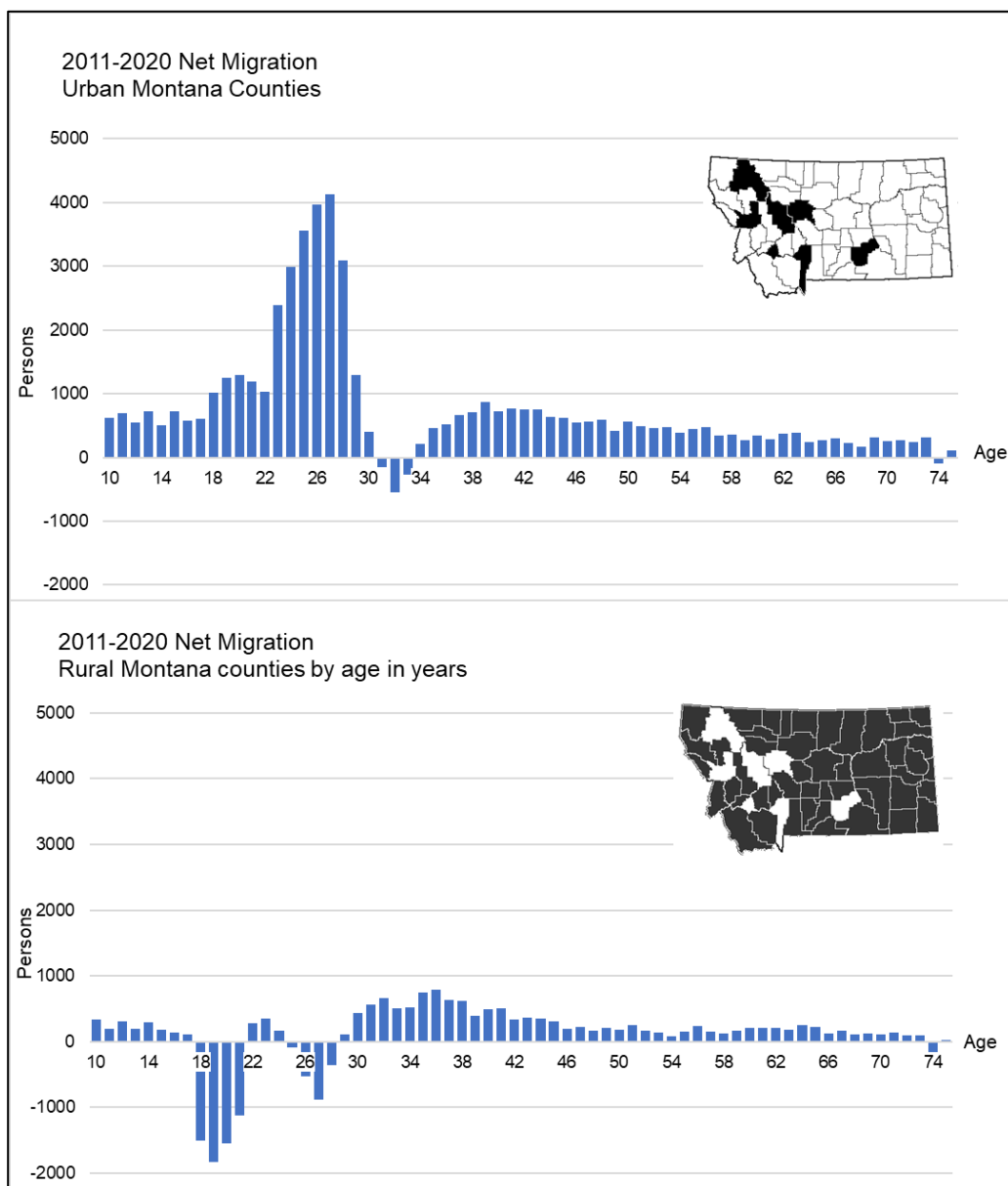


These maps illustrate two main points. First, the retirement-age dependency is projected to increase in every county in the state, and in many cases is projected to increase by a large margin. Second, this increase is not equally distributed across the state: in many cases rural counties are expected to experience a larger increase in retirement-age dependency ratio than counties with large cities. Note that increases in the retirement-age dependency ratio can occur because of more retirement-age persons moving to a jurisdiction or working-age persons leaving a jurisdiction, or both.

### 5.3. Montana's Demographics: Migration

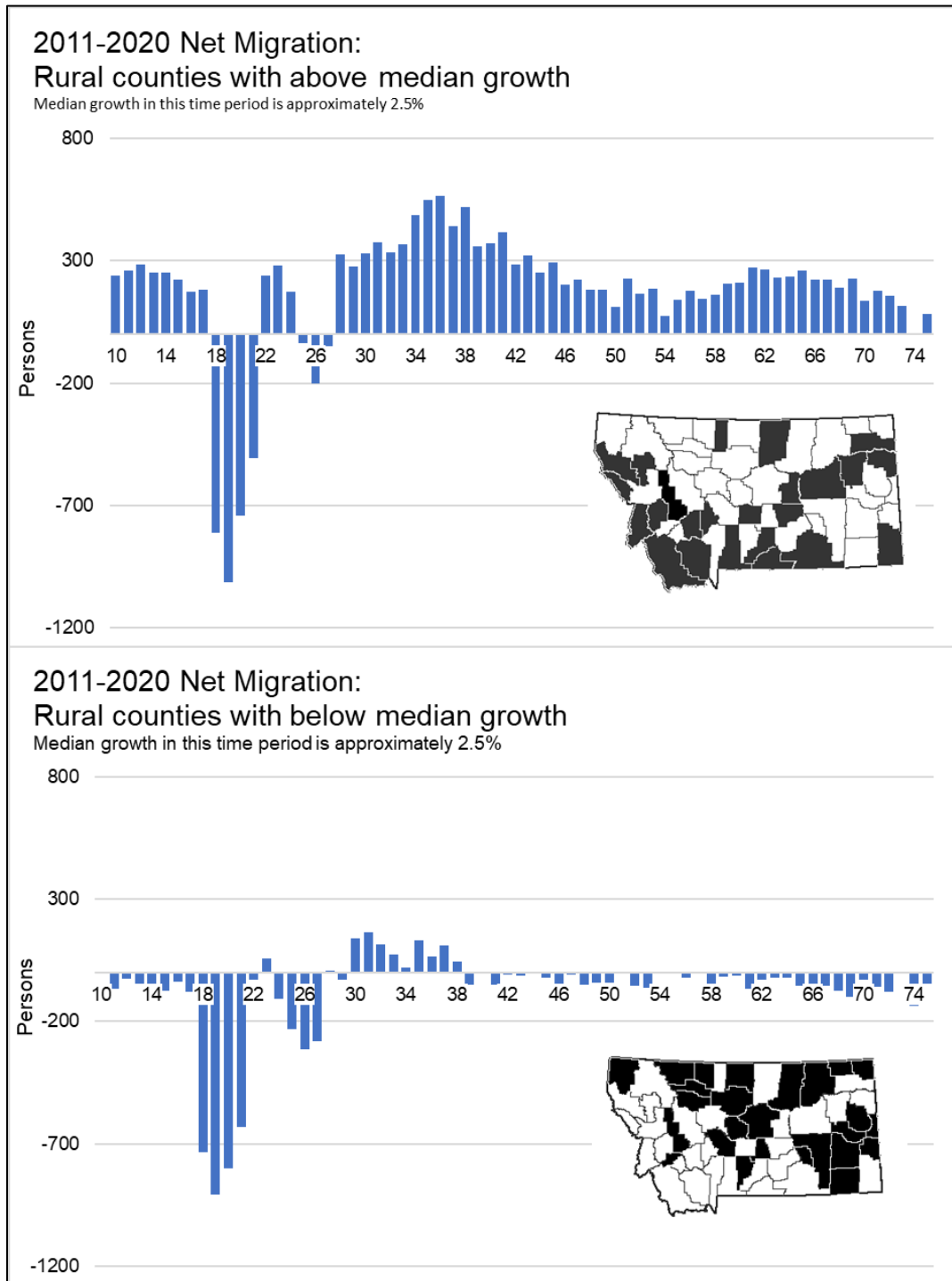
Along with aging, migration is another population process that will continue to shape Montana's demographic characteristics. Several of the maps discussed above have communicated the impact of residents being more likely to move to certain Montana counties and out of others. The graphs below show statewide net migration for Montana's counties by age from 2011 to 2020. The top graph represents Montana's counties with large cities. These counties have experienced a net increase from migration for all

age groups except persons in their early 30s. There are large increases associated with persons of college and graduate school/early career. The bottom graph displays the same information for Montana's rural counties. As discussed previously, urbanization has appeared to depress growth in rural counties. Net migration by age is nearly uniformly lower than for urban counties, with the exception of the early 30s age group.



This difference becomes more apparent if we break down the rural counties into two groups. The two graphs below show net migration for rural counties broken down by those counties with above median population growth and those with below median population growth (2011-

2020). As previously suggested, migration impacts various Montana counties in very different ways. Consider the top graph first, which shows net migration for rural Montana counties with above median growth. These counties have fairly consistent net migration gains, with the exception of college aged and mid-20s persons. These counties also have positive growth in the pre-retirement and retirement age cohorts, suggesting the presence of “scenery retiree.” The bottom graph shows net migration for rural Montana counties with below median growth. These counties show consistent losses across the age cohorts with the exception of the 30s age cohort.



## **5.4. Public Finance Implications of Montana's Demographics**

### **5.4.1. Why are Demographic Changes Important?**

This report has detailed the manner in which Montana's population continues to age. An aging population is associated with an increased retirement-age dependency ratio, as discussed above. Retirement-age dependency ratios are projected to increase in every county in the state and grow significantly in certain counties. Why should policymakers care about dependency ratios?

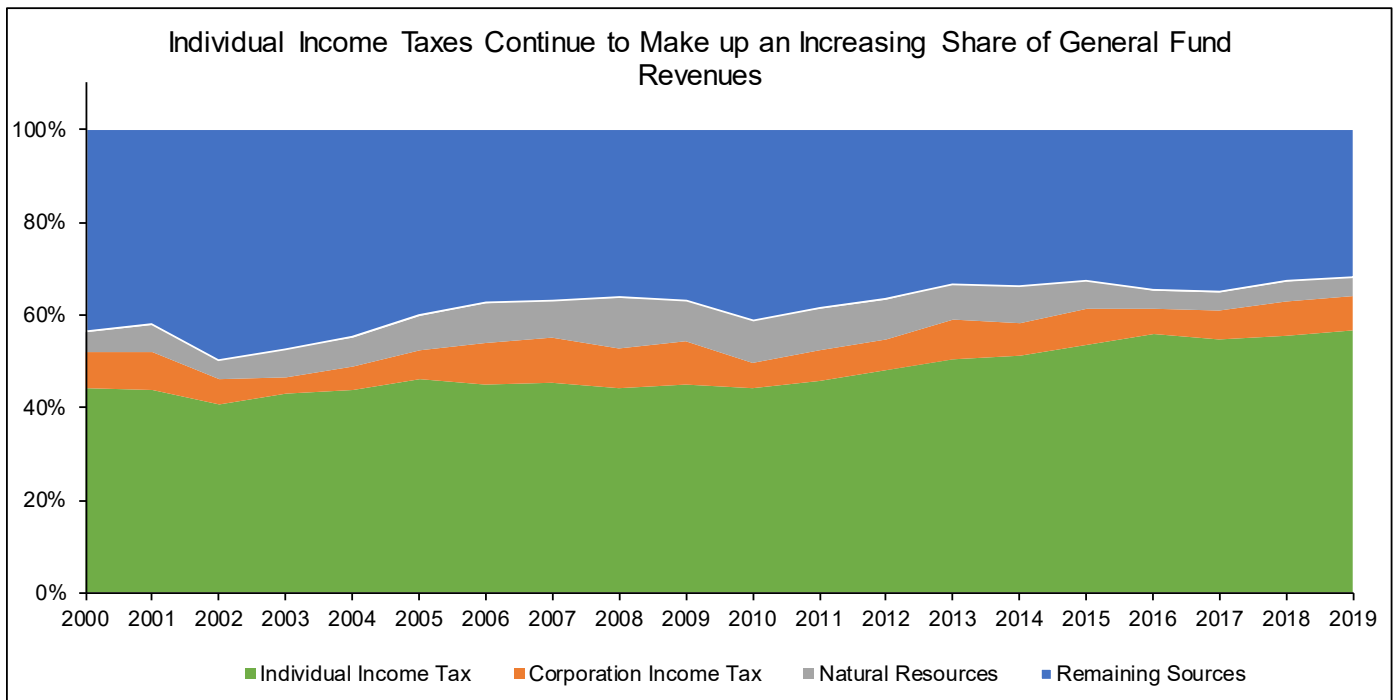
Changes in dependency ratios may have profound implications for policymakers due to the presence of policies with intergenerational components. Some intergenerational policies are forward-looking: they facilitate transfers (in the form of tax revenue) from the relatively old to the relatively young (or unborn). Examples of such include K-12 and higher education, infrastructure expansion and maintenance, research, policies that support low-income children, and environmental protection.

Other intergenerational policies are backward looking: policies of this type involve transfers from the young (or unborn) to the old. Examples of backward directed policies include public pensions (like Social Security in the U.S.), publicly funded old-age healthcare or health insurance, and various types of public debt (with the assumption that the debt will be paid by future generations).

Both forward and backward-looking intergenerational policies are sensitive to demographic change. As the ratio of old to young changes in a jurisdiction ensuring the stability of intergenerational policies may become challenging: changes to both revenue streams and demands for expenditures can occur given significant demographic change.

### **5.4.2. Income Tax Implications of Demographic Change**

Multiple different revenue sources make up Montana's general fund. Over time however, the makeup of the state's general fund has become increasingly reliable on income taxes, specifically personal income tax. The following figure illustrates the increasing reliance on personal income tax.



As the figure above shows, in FY 2000 individual income tax accounted for 44% of total general fund revenue. By FY 2019 it had grown to 57% of total general fund revenue.

Income taxes are inherently volatile, as they have the ability to be shifted through time. For example, the Tax Cuts and Jobs Act (TCJA) of 2017 likely caused taxpayers to shift income into future years as they anticipated lower rates at the federal level. This can lead to unexpected budget shortfalls, especially as income taxes' share of revenue continues to grow.

### Future Aging Risks to Income Tax

While Montana is already at risk of swings in revenue collections due to its dependence on personal income taxes, its aging population may pose additional risks. According to the US census, in 2018 the nation's median age was 38.2 compared to 30.2 years in 1950. This is driven nationwide by declining birth rates and longer life expectancies. Furthermore, Montana is older than the median state, with a median age of 39.9. Specifically, only ten states have a higher median age than Montana.

Generally speaking, as individuals retire, their personal income declines relative to their final earnings. As their income declines it is likely that their tax liability will decline as well. It should follow then, that as a particular cohort of the population ages, they will pay less in taxes. The question ultimately arises if this will materially impact a state's income tax collections. There are multiple factors that could affect the magnitude of the impact.

For instance, as individuals retire it is likely that their employer will attempt to refill the position. It is often the case that newly hired individuals will earn less than what the retiree was making. If this is the case that position will have a lower tax liability. The combined tax liability between the now retired individual and

newly hired individual may be larger or smaller than what the retiree was paying pre-retirement. It all depends on what the retiree's post retirement income looks like.

One potential risk to the scenario mentioned above is the possibility of not being able to fill new positions. As the population becomes older, there are fewer individuals to fill open entry-level positions. It may be the case that Montana will need individuals to move here to fill these positions. If these positions remain unfilled, and this phenomenon is widespread, income tax collections will almost certainly decrease.

## Potential Future Analysis

- **How does income change in retirement compared to working years?** Analysts have access to detailed taxpayer information that has had all personally identifiable information removed from it. One of the variables in these data are whether the individual is 65 or older. If a taxpayer is over 65, the taxpayer ID could be matched with prior years' data to study how their income and tax liability changes.
- **Does Montana have enough in-migration to fill job openings?** The Montana Department of Labor has numerous reports and data detailing migration into the state. With these tools analysts could further understand the type of people moving into the state, such as their age, education level, and what counties they're moving to.
- **What do the above findings mean for future income tax collections?** Given the results from the items above, income tax collections could be simulated in future years assuming current trends continue.
- **Do retirees outlive their savings?** By following individual taxpayers over time, their income and tax liability could be tracked through their retirement years. In addition to affecting income tax collections, this could affect state spending on other services.

This list represents some of the research that may be beneficial to understanding how Montana's demographics may affect future revenue collections. It is certainly not limited to the items listed above. Note that a separate report discusses the potential property tax implications of demographic change.

### 5.4.3. Service demand implications

Montana's projected demographic changes may have significant implications for certain types of public services. Continued population aging could be expected to increase demand for retirement-age health services. The state's Medicaid program may see increased enrollment from age 65+ residents as there will be more retirement-age persons in the population. This would be a significant development as elderly Montana Medicaid enrollees have high per-user annual costs when compared to other types of Medicaid enrollees (children, adults, and disabled individuals). Demand for other old-age health services, such as adult protective services and other programs intended to support the elderly could be expected to rise.

In some Montana counties the population of youth has decreased over the last two decades and is expected to continue to decrease; a contributor to population aging as discussed above. This experience is especially significant in certain rural counties. A decrease in youth in a jurisdiction will lower the demand for the provision of K-12 education. So, while population aging may increase the demand for some services it will likely decrease the demand for other services.

The migration patterns discussed above will likely lead to varied service demand impact across Montana's regions and counties. Increased populations in Montana's counties with large cities and certain western Montana counties may necessitate increased infrastructure provision. Increased numbers of youth in certain counties will demand the additional provision of K-12 education.

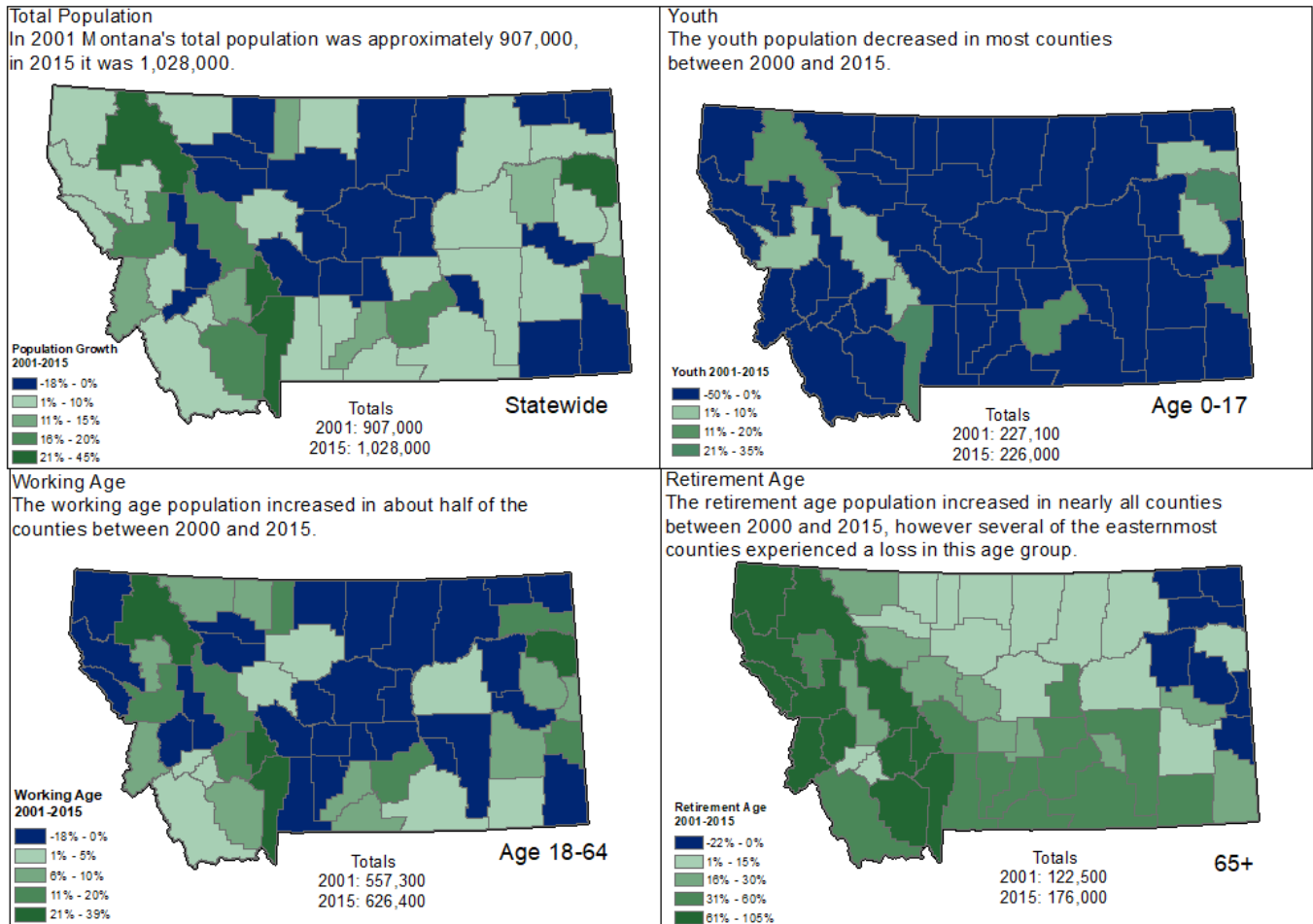
## **6. Conclusion**

This report discusses the implications of the state's projected demographic changes for state and local finance. Population changes are important to understand as policymakers consider various potential changes in policy. This report discusses important aspects of demographic change for each age cohort in the state, with an emphasis on the fact that demographic change manifests in different ways across the state.

First, the youth population in the state has exhibited, and is expected to continue exhibiting relatively flat growth. This has led to slow growth in demand for the provision of K-12 education relative to other services. Second, the working age population in the state has grown (and will continue to grow) in real numbers but will continue to shrink in proportion as the population of the state continues to age. Third, the state's retirement-age population has grown in real numbers and proportion since 2000 and is expected to continue growing. This may increase the demand for some retirement-age public services, including Medicaid. The legislature may desire more research to better understand income and aging trends that may impact service demand and revenue collection trends.

## 7. Appendix

Growth or Loss in selected age groups between 2001-2015.  
Green indicates growth, blue indicates loss





Growth or Loss in selected age groups between 2015-2030.  
 Green indicates growth, blue indicates loss

