# The Effects of Aging on Colorado's Revenue and Expenditures: A View to 2030

## Introduction

The Colorado Futures Center at CSU was tasked with analyzing the long term impacts of aging on the state's revenue streams as well as its spending programs. This report describes our findings in these two areas.

***Impact of Aging on State Revenue***

All governments in the state rely in some combination of three major revenues for the majority of their financial support: 1) the individual income tax; 2) the sales tax; and 3) the property tax. Rather than analyzing by level of government, the Colorado Futures Center (CFC) forecast the impact of the changing age distribution in Colorado on the three major tax revenue streams. A template of levels of government in Colorado showing how each level relies, on average, on each of the major tax sources is included.

CFC's approach was to build models that allow for assessment of the impact of aging while controlling for other factors that affect economic behavior.

Our analytical approach for each of the revenue streams is outlined below.

- Sales Tax - CFC built a cohort model using data from the consumer expenditure survey to project the future spending patterns of Coloradans. From this model of consumption, the CFC forecast of future sales tax revenue analyzes the impact of the aging cohort on sales tax collections.
- Income Tax - CFC built a cohort model using data from the Colorado Department of Revenue Statistics of Income to project future individual income tax revenue as the basis for analyzing the impact of aging on income tax collections.
- Property Tax – The property tax will be affected by aging in multiple interrelated, complex and uncertain ways. Because the impacts on property values are myriad, interrelated and very uncertain, and due to the constraints of available time and resources, CFC was not tasked with building a property tax model. The State, however, has had a property tax program, enacted in 2000, which is specific to seniors. Although the state does not levy a property tax, the state does reimburse local governments for the revenues lost as a result of the program. It is important to note that the General Assembly has the authority to reduce the exemption level or to suspend the program when necessary. CFC's model forecasts the level of the senior property tax exemption under the assumption that it is fully funded each year.

***Impact of Aging on State Programs and the State Budget***

The program most likely to be impacted by aging is Medicaid. CFC forecast the full Medicaid program to assess the extent to which aging will become an increasing driver of Medicaid expenditures. CFC forecasts include the two components of Medicaid expenditures - demand and cost – and assesses the State budget impact by funding source.

Programs in other departments of state government, particularly the Department of Human Services, also will be affected by the aging population. CFC surveyed the programs of the other departments for the major aging-related expenditure drivers, documented the recent growth of each one. For some of these programs, appropriate data were not available for modeling and forecasting their growth in future years, but did forecast future impacts where appropriate data allowed.

## The Effect of Aging on State Taxes in Colorado

### ***The Sales Tax***

The sales tax is the second largest source of revenue to the state General Fund. Preliminary estimates are that the sales tax generated just over $2.6 Billion in FY 2015-16, just over one quarter of all state General Fund revenue. To the extent that households contribute to the sales tax, aging will affect the future growth of revenues.

**Older Households Spend Less on Taxable Items.** To quantify the effect of aging on Colorado sales taxes the Colorado Futures Center used recent data from the Consumer Expenditure Survey (CES) which shows detailed spending patterns for American households. This is a national survey conducted by the US Bureu of Labor Statistics (BLS). There was sufficient detail to allow CFC to estimate household spending on items that are taxable in the state of Colorado. The data are portrayed in many ways, most importantly by the cohort of the age of the head of household. CFC was then able to match these spending patterns to age cohort forecasts by the Colorado State Demography Office.

Households headed by persons 65 and over spend less absolutely, and in particular, less on Colorado sales-taxable items than the 25 to 64 cohorts. Only the under 25 year old cohort spends less on a per household basis. The largest spending cohorts are in the 25 to 64 age groups. The table and chart below compare 2015 average household expenditures in total and on taxable items.

**Table 1. Household Spending by Age of Head of Household**

| Household Cohort | Total Average Annual Spending | Average Taxable Spending |
|---|---|---|
| Under 25 | $32,179 | $10,211 |
| 25-44 | $56,211 | $17,180 |
| 45-64 | $60,968 | $18,302 |
| Over 65 | $43,635 | $13,095 |

Source: Consumer Expenditure Survey, U.S. Bureau of Labor Statistics.

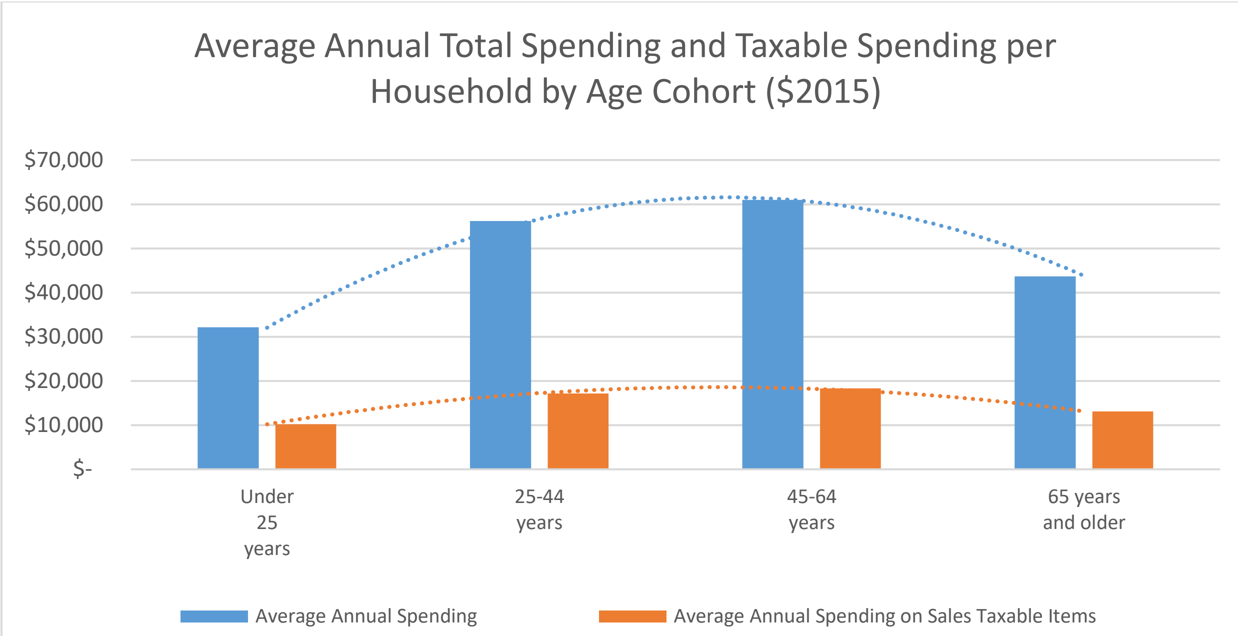


Figure 1. Total Per Household Spending and Taxable Per Household Spending in $2015. Source: Consumer Expenditure Survey, U.S. Bureau of Labor Statistics.

There is a big gap between total household spending and taxable spending. Total spending includes spending on housing, spending to increase financial assets, spending on education, and other items that will probably never be taxed. It also includes spending on food and home energy, which the State of Colorado does not tax.

Notice the inverted "U" pattern in the graph data in Figure 1. This pattern occurs in nearly all categories of spending. The reasons that older households spend less are many. First, older households have less income than the 25-64 cohorts. For example, according to the CES, average pre-tax household income for the 45-64 year old cohort is $87,859. Mean income for the 65 and over cohort is $45,100. Older households are smaller. The average number of people in the 45-64 household was 2.8. For the 65 and older household, average household size was 1.8. The over 65 household spends less in nearly every category. There are a few exceptions. Notably, the older households spend more on health care, namely $5,849. The 45-64 household spends $4,728.

**Methodology**

Forecasting sales taxes and consumer behavior over a 14 year forecast horizon presents challenges. First, we know that consumer behavior is likely to change as much in the next 14 years as it has in the last 14 years. While futurists speculate about technological and social changes that will occur in the next decade and a half, there is certainly no consensus among them that would allow us to make educated guesses about how these changes would affect purchasing choices by consumers and other economic behaviors. For this reason, our sales tax forecast to FY 2029-30 is predicated on continuation of current consumer behavior into the future, all things remaining equal, and looking at sales taxes in isolation.

In order to estimate the effects of the aging population on Colorado sales taxes, we used two primary data sources. The first data source consists of projections of Colorado households by age cohort from the Colorado State Demography Office. The Demography Office provides projections of population by single year of age and households by age of head of household, through 2050.

The second major data source is the most recent Consumer Expenditure Survey done by the U.S. Bureau of Labor Statistics (BLS). One of the mandates of the BLS is to conduct surveys to report income and expenditures by consumer units across the United States. In the words of the BLS: “The Consumer Expenditure Survey (CE) program consists of two surveys, the Quarterly Interview Survey and the Diary Survey, that provide information on the buying habits of America's consumers, including data on their expenditures, income, and consumer unit (families and single consumers) characteristics. The survey data are collected for the Bureau of Labor Statistics by the U.S. Census Bureau.”

According to the BLS:

> The CES is important because it is the only Federal survey to provide information on the complete range of consumers' expenditures and incomes, as well as the characteristics of those consumers. It is used by economic policymakers examining the impact of policy changes on economic groups, by the Census Bureau as the source of thresholds for the Supplemental Poverty Measure, by businesses and academic researchers studying consumers' spending habits and trends, by other Federal agencies, and, perhaps most importantly, to regularly revise the Consumer Price Index market basket of goods and services and their relative importance...The most recent data tables are for 2015, and were made available on August 30, 2016.

Expenditures are reported in considerable detail. Specifically, Table T1300 contains detailed household expenditure data in cohorts by the age of the head of household. The cohorts are compatible with those used by the State Demography Office. Colorado Futures Center staff then accumulated taxable expenditure line items to get total per household spending on taxable items for each of the four cohorts. (Under 25, 25-44, 45-64, and over 65.) Table T1300 reports data on 127,006 households. This is a national sample. It is large, but not large enough to provide good data on Colorado specifically. Therefore, we used the entire national sample in our analysis.

Each cohort has different spending patterns as shown in the report. Taking the average annual expenditure of each cohort, and multiplying by the number of households in that cohort, CFC staff could then estimate total annual spending on taxable items, year by year, through 2030.

As stated above, CFC maintained the 2015 spending patterns throughout the projection years. That is, we did not attempt to make educated guesses about changes in spending patterns throughout the projection horizon.

## Findings

**The 65 and Over Cohort is the Only Cohort That is Growing as a Proportion of Total Households.** In Colorado, the 65 and over cohort is the only one that grows as a percentage of total households through 2030. In fact, the cohorts that spend the most are shrinking slightly as a percentage of total households. So the higher spending cohorts are shrinking, and the lower spending cohort is growing in percentage terms. Figure 2 below shows these trends.

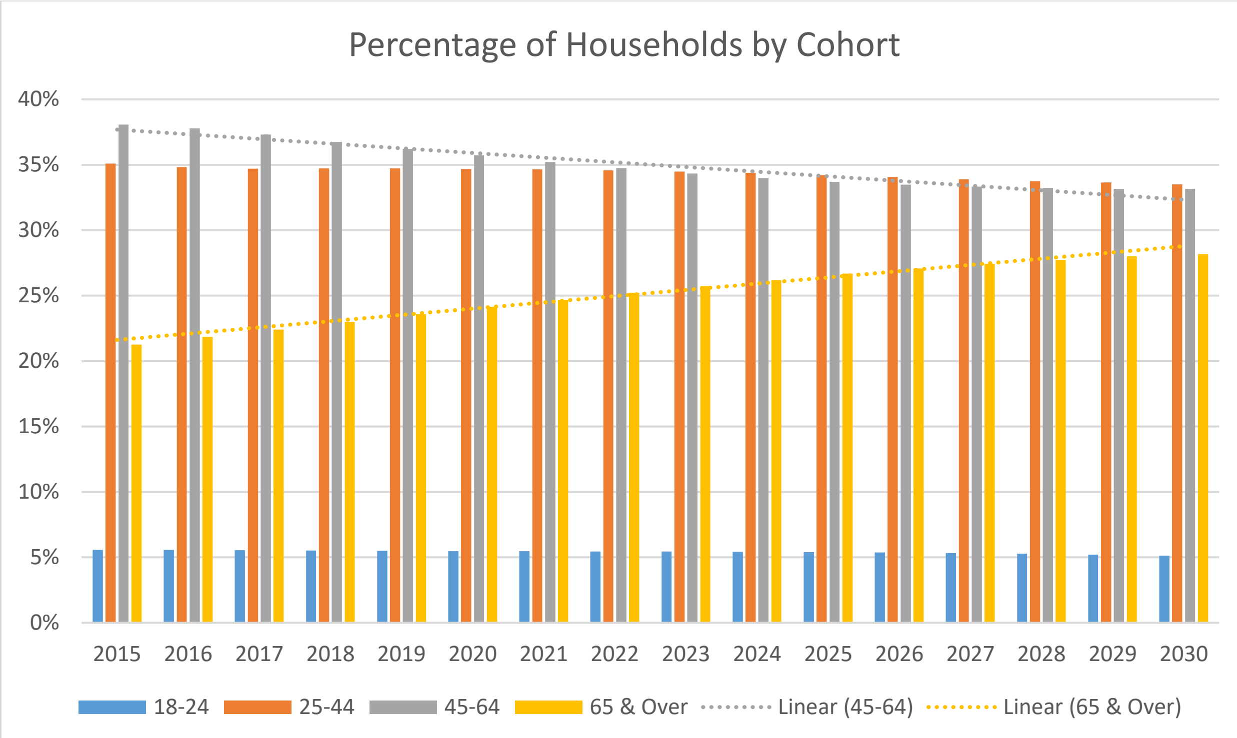


Figure 2. Cohort Households as a Percent of Total Households. Source: Colorado State Demography Office

These trends by themselves erode the state's sales tax base. Average spending by all households decreases as shown in Figure 3 below.

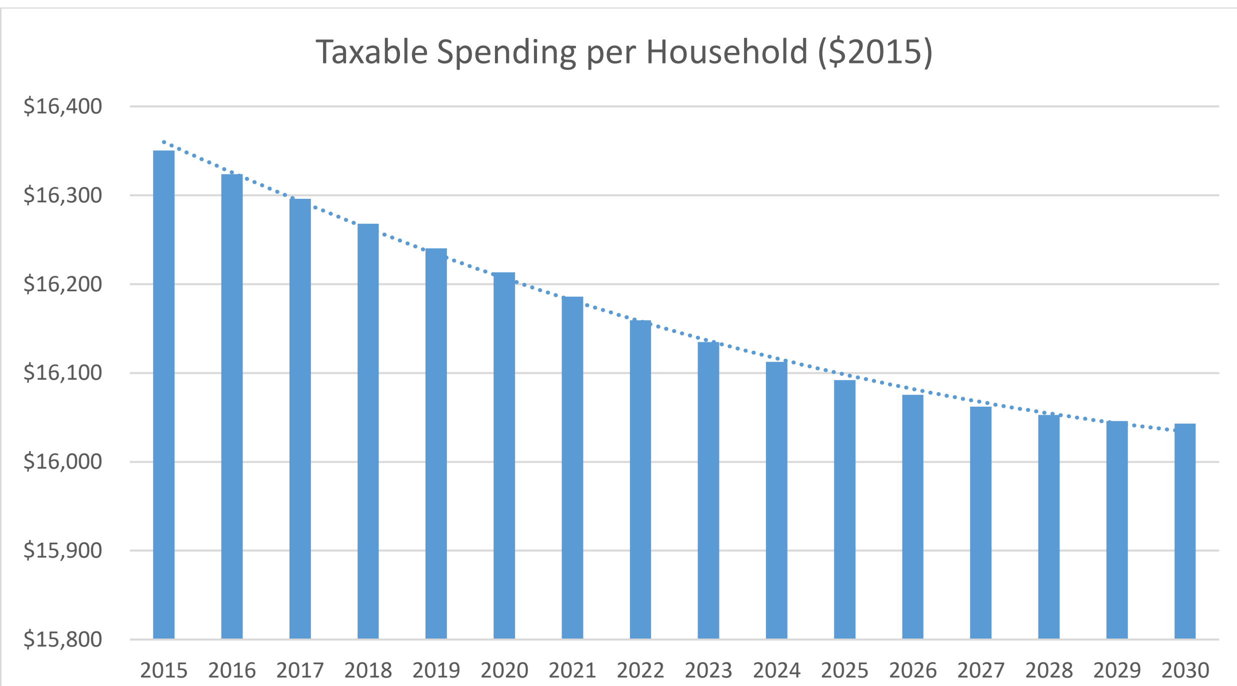


Figure 3. Colorado Taxable Spending per Household ($2015). Sources. Colorado Futures Center.

Due to the relative growth of lower spending 65 and over households, real taxable spending per household declines steadily from just over $16,300 in 2015 down to a bit over $16,000 in 2030.

Figure 4 below shows this trend in percent growth terms. The declines are not great, but they do represent a drag on the state sales tax base.

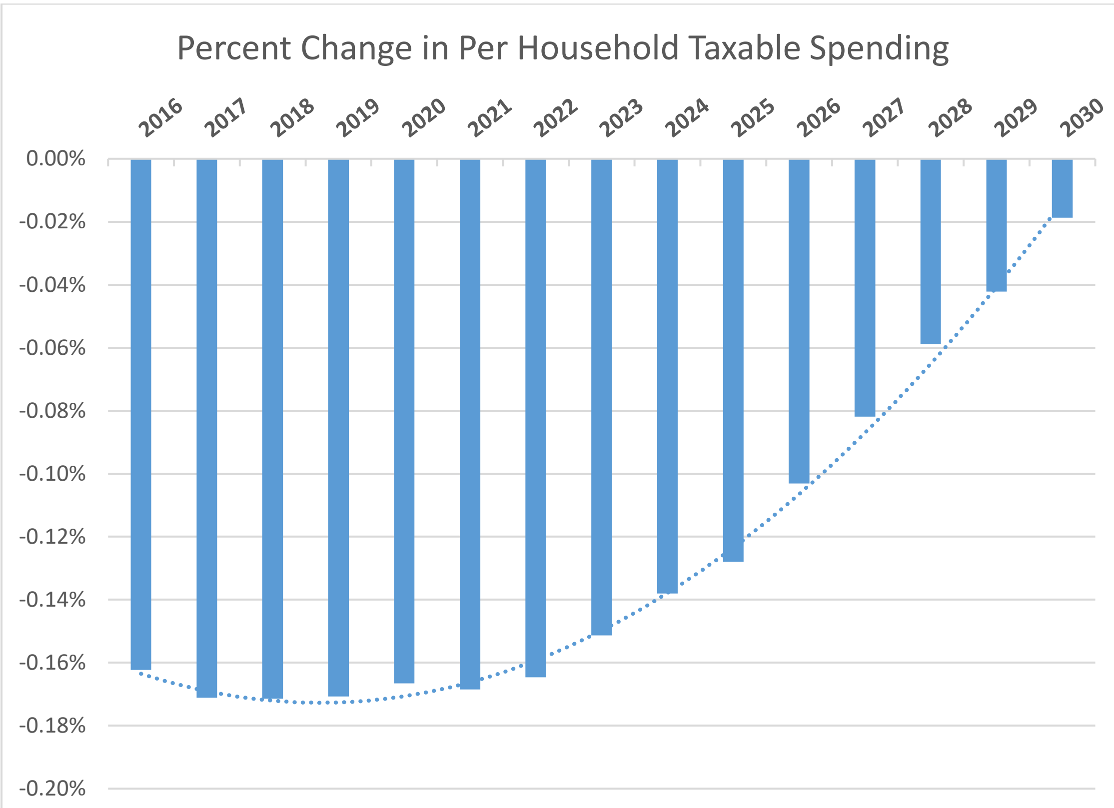


Figure 4. Growth in Per Household Spending ($2015). Source: Colorado Futures Center

The percentage declines in household spending are small. The negative growth rates peak at about minus 0.17% early in the period and shrinks to just below zero later in the period.

There is an offsetting trend. Total household numbers are predicted to grow.

**The Total Number of Households is Predicted to Grow.** In Colorado, the total number of households is expected to grow steadily, despite the aging of the population. This offsets the trend toward lower average household spending.

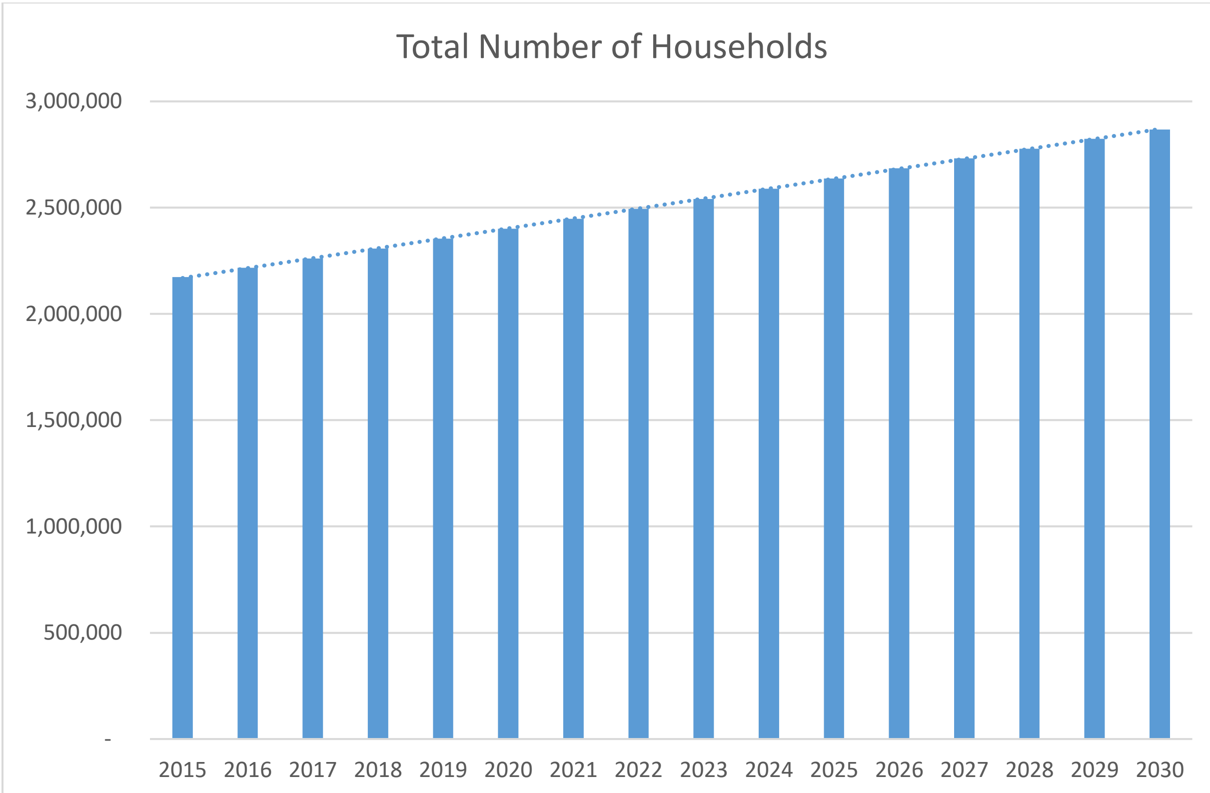


Figure 5. Total Number of Households in Colorado. Source: Colorado State Demography Office.

This same trend can be looked at in growth rate terms. Total household growth peaks at about 2% in 2018. Then it declines to about 1.5% in 2030, but it remains positive throughout the period.

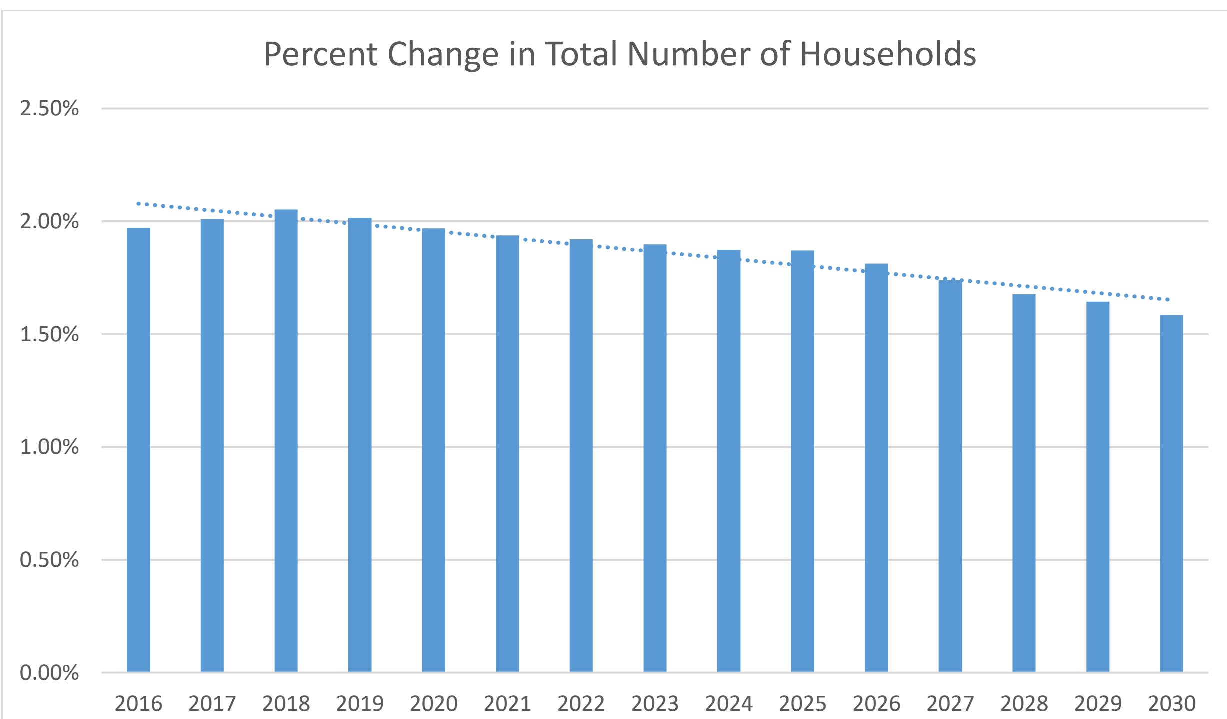


Figure 6. Percent Change in Total Number of Household. Source: Colorado State Demography Office.

The growth in total households outweighs the decline in spending per household, so Colorado sales taxes continue to grow, just at a slower rate.[1]

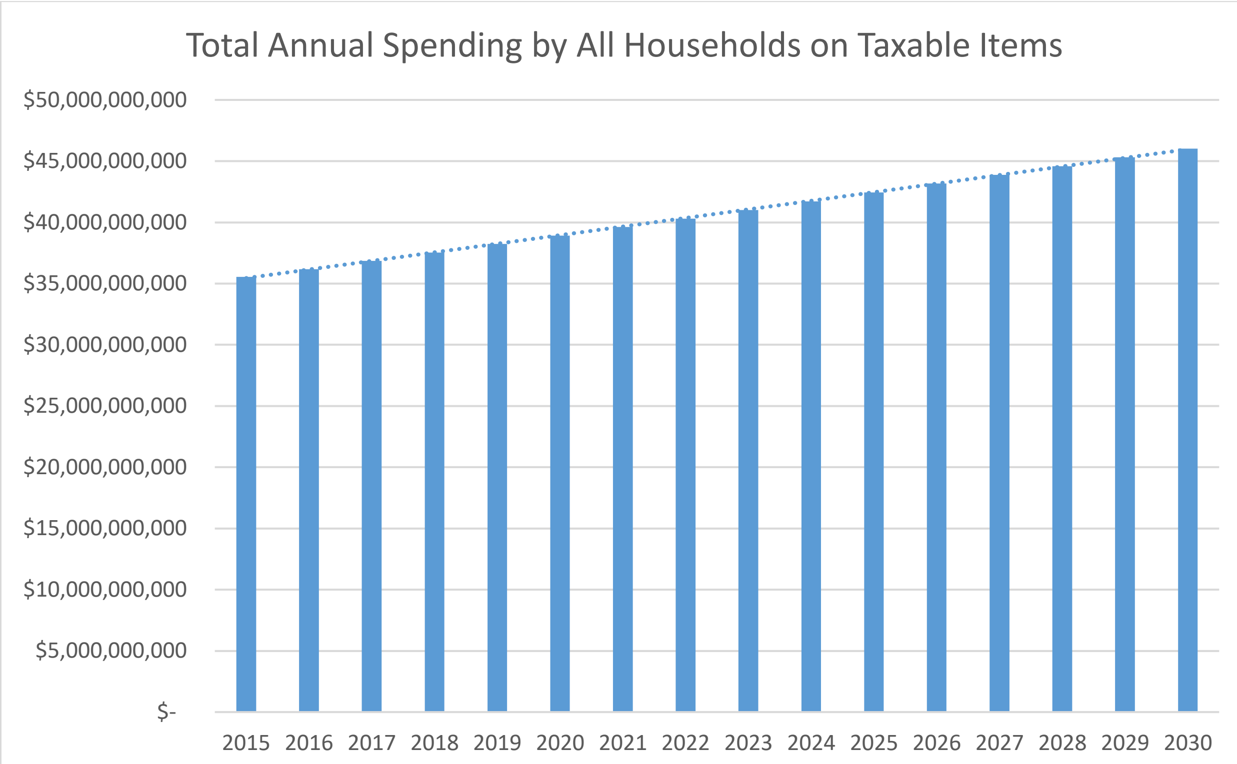


Figure 7. Estimated Total Household Spending on Taxable Items ($2015). Source: Colorado Futures Center

Figure 8 below portrays this in percent growth terms.

[1] Note that total spending is in the billions of dollars. This is correct. The state collects 2.9% of these amounts. For example, the $36 billion in household spending at 2.9% accounts for about $1.04 billion in sales tax. This represents about 39% of actual 2015 collections. The state Department of Revenue estimates that about 50% of sales taxes come from resident households. The other 50% comes from non-residents and businesses. The gap between our 39% and Department of Revenue's 50% may be due to the fact that the Consumer Expenditure Survey is a national survey. Colorado income, therefore spending, may be somewhat higher. However, the trends and conclusions of this report would remain unchanged if we scaled up the per-household number.

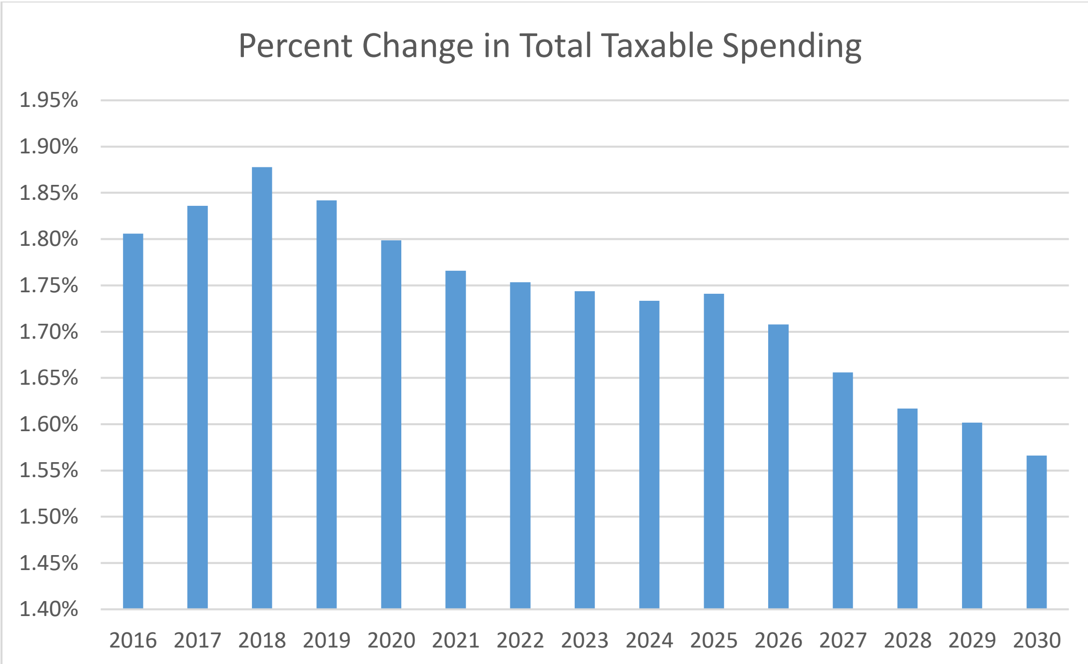


Figure 8. Growth in Total Spending by Resident Households ($2015). Sources: Colorado Futures Center

Though total household spending grows, the net growth rate declines as shown in the chart above. The growth rate peaks in 2018 at just over 1.85% then declines to just over 1.55% in 2030. Note that the amounts are stated in fixed 2015 dollars. Also the reader must keep in mind that more is happening in the Colorado economy that just household growth and lower per household spending. For example, business spending and non-resident spending may remain strong. ***This analysis shows that other things being equal, the aging of the population dampens the growth rate of the state's sales tax base.***

## ***The Income Tax***

The individual income tax is the single largest source of revenue to the state General Fund. Preliminary estimates are that the individual income tax generated just over $6.5 Billion in FY 2015-16, approximately two thirds of all state General Fund revenue. As with the sales tax, the individual income tax also will be adversely affected by the aging demographic in Colorado.

There are three distinct ways in which the income tax will be affected by aging. The first and most direct way is that taxable income falls once the taxpayer moves from high earning employed years to retirement years when most Coloradans live on fixed pension or other retirement income. The graph below clearly shows this pattern for tax year 2013, the latest year of detailed individual income tax revenue data available.

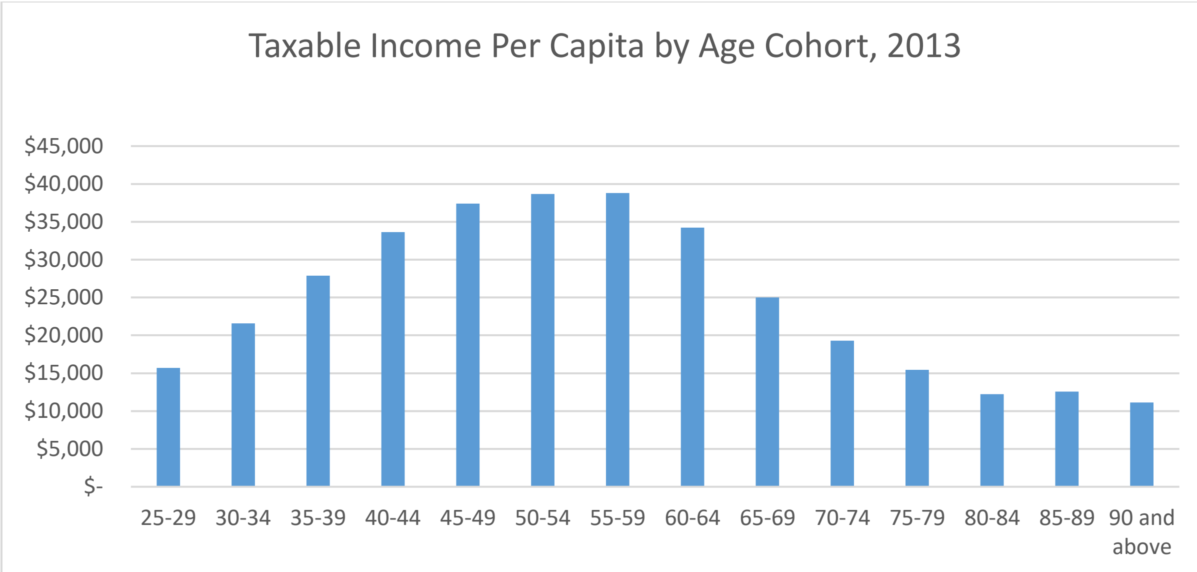


Figure 9. Taxable Income Per Capita by Age Cohort, 2013. Source: Calculation from data from Colorado Department of Revenue and State Demography Office

The second and third ways in which aging affects individual income tax revenue is through the tax code. Taxable income in Colorado is based on federal taxable income, and the federal tax code contains some reductions from income, such as the additional exemption for being over 65 years old, which flow through to the income tax base in Colorado. In addition, Colorado's tax code exempts a portion of pension and annuity income from the individual income tax.

These tax benefits, taken together with the lower earning profile of older Coloradans result in a degradation of the productivity of the individual income tax as the state ages. It is important to note, however, that at the same time Colorado is aging, it is also growing in population of all ages. Given that the state is projected to continue to grow, TOTAL income tax revenues are also projected to grow. The loss in productivity is reflected in two ways: a reduction in the PER CAPITA income tax collections and a resulting reduction in the RATE OF GROWTH of total income tax revenue. Colorado in the future will not have a smaller income tax base, just a slower growing one.

**Methodology**

The best data available to model the impact of aging on individual income tax revenue were the Statistics of Income (SOI) for 2013 from the Colorado Department of Revenue. Unfortunately, we were unable to obtain a sufficient historical time series of these data, so we modeled from the data for the 2013 tax year. If 2013 were a particularly unusual year, this would introduce bias into our findings. However, we have no reason to believe that the 2013 data are in any way outliers.

The SOI compiles data only from full-year resident returns in Colorado. As a result, it fails to account for the entire individual income tax base (the largest difference is made up by filings from part-year residents). In 2013, the SOI data accounted for approximately 81% of total collections. The advantage of the SOI data is its granularity. For 2013 we know the following:

**Table 2. Number of Returns, Colorado Taxable Income, and Colorado Gross Tax by Age Cohort, 2013**

| Age Cohort | Number of Returns | CO Taxable Income | CO Gross tax |
|---|---|---|---|
| 25-29 | 205,050 | $ 5,727,158,743 | $ 265,161,464 |
| 30-34 | 188,367 | $ 8,335,413,535 | $ 385,925,711 |
| 35-39 | 163,902 | $ 9,935,478,390 | $ 460,010,469 |
| 40-44 | 168,984 | $ 12,351,832,080 | $ 571,886,466 |
| 45-49 | 162,766 | $ 13,032,084,278 | $ 603,382,968 |
| 50-54 | 179,473 | $ 14,674,320,459 | $ 679,417,519 |
| 55-59 | 167,760 | $ 13,824,452,454 | $ 640,068,646 |
| 60-64 | 135,326 | $ 10,351,783,418 | $ 479,285,928 |
| 65-69 | 84,585 | $ 5,776,276,113 | $ 267,440,284 |
| 70-74 | 46,205 | $ 2,965,906,875 | $ 137,320,936 |
| 75-79 | 27,100 | $ 1,639,323,174 | $ 75,900,067 |
| 80-84 | 18,339 | $ 956,475,668 | $ 44,284,437 |
| 85-89 | 11,523 | $ 634,301,808 | $ 29,368,146 |
| 90+ | 6,642 | $ 36,440,836 | $ 15,576,967 |

Source: Colorado Department of Revenue Statistics of Income

To model future income tax collections, we combined these data on the tax base and collections with population estimates and forecasts from the Office of the State Demographer. From these data, we calculated both the ratio of returns to population and the average revenue per return for each of the age cohorts. We then held those ratios constant and applied them the future population profile of Colorado as projected by the State Demographer. With this methodology, we forecast the impact of the shifting age demographic on revenue from the individual income tax. It is important to note the implicit assumptions of this methodology:

- We are holding all factors other than aging constant. Implicitly we are assuming no change in the economy, household makeup, returns per population by age cohort, or the income distribution of Colorado households.
- We are assuming that the ratio of total returns to population will stay constant by age cohort. We also are assuming implicitly that future generations of older Coloradans will be no wealthier in real terms than the 2013 cohort of older Coloradans.
- Because of the above assumptions, the results are stated in 2013 real dollars.
- And, as a result, we are isolating the effect of aging but not providing a forecast suitable for a long term “budget” exercise. We are modeling how age alone affects the productivity or growth rate of the individual income tax.
- Since we are able to model only off of a single year of data, we assume that 2013 is a representative year and not an outlier.
- We assume no other change in tax law, either at the state or federal level.

With these assumptions, our methodology follows closely that of Felix and Watkins[2] in their national study of the impact of aging on state tax revenues.

**Findings**

Holding everything constant and modeling the impact of aging, per capita income tax collections from the portion of the income tax base attributed to full-year resident taxpayers is projected to fall from just over $880 Million in tax year 2016 to just over $866 Million in tax year 2030. As demonstrated in the graphic below, an aging population is projected to lead directly to a reduction in the real value of the income tax per capita.

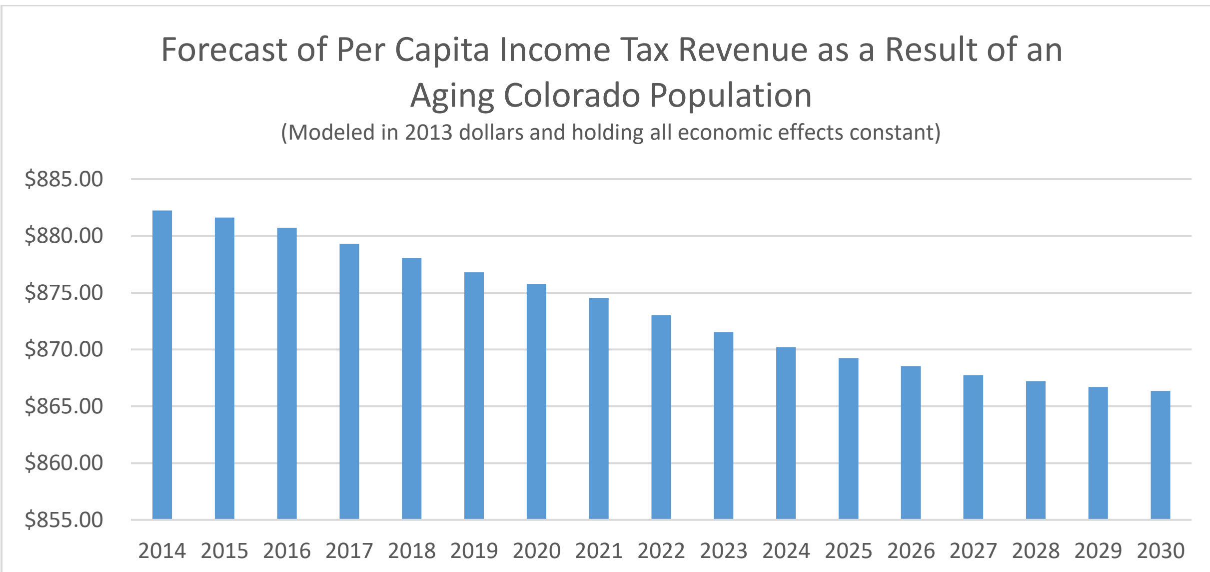


Figure 10. Forecast of Per Capita Income Tax Revenue as a Result of an Aging Colorado Population. Source: Colorado Department of Revenue

However, this will not result in a reduction in the level of total individual income tax collections. This is because over the same time period Colorado's population is projected to increase from 5,538,522 to 6,970,593 and the population growth will outweigh the impact of aging on total revenues. Our forecast of the impact of aging shows total individual income tax collections from this segment of taxpayers growing from $4.877 Billion in tax year 2016 to $6.039 Billion in tax year 2030. However, due to aging and holding constant all other economic and demographic factors, the rate of growth of the individual income tax is not projected to keep up with that of population. As a result, the growth rate of total collections is projected to slow from just over 1.6% to just under 1.45%, remaining positive but rendering this revenue source slightly less productive. ***As with the sales tax, Colorado in the future will not have declining income tax revenue, just a slower growing revenue source.***

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[2] Felix, Alison and Kate Watkins. 2013. The Impact of an Aging US Population on State Tax Revenues. Federal Reserve Bank of Kansas City Economic Review, Fourth Quarter 2014. Pp. 95-127. Accessed on October 30, 2016 at https://www.kansascityfed.org/publicat/econrev/pdf/13q4Felix-Watkins.pdf.

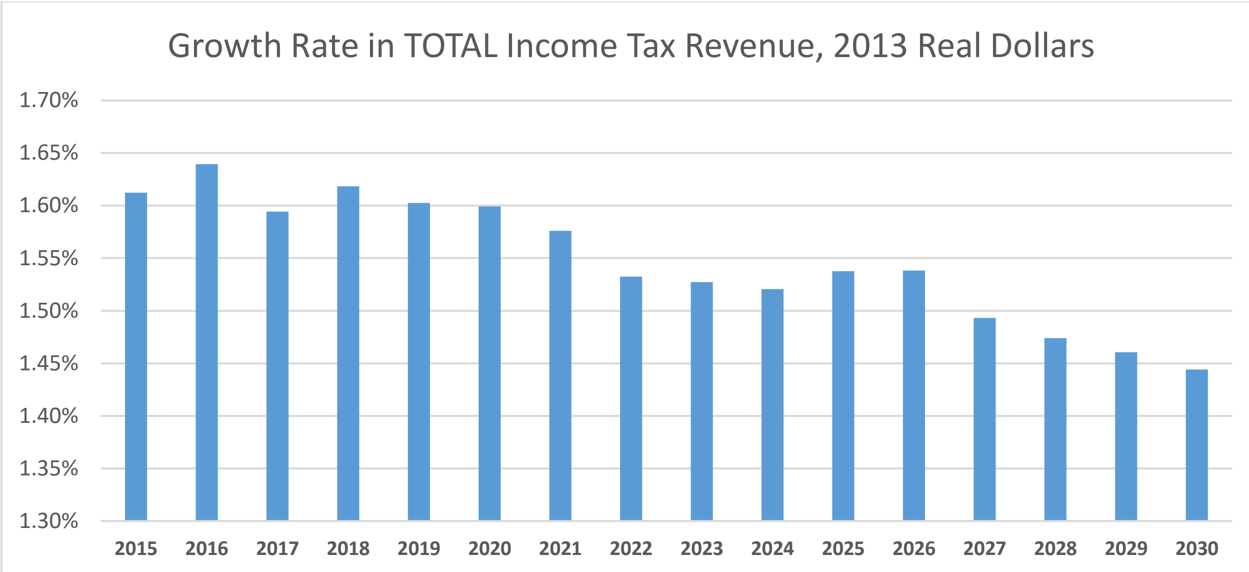

Figure 11. Growth Rate in TOTAL Income Tax Revenue, 2013 Real Dollars. Source, Colorado Futures Center Forecast

## How Will Aging Affect Local Government Revenue?

There are currently has 3,680 active local governments in Colorado, including 62 counties, 2 city and county governments, 97 home rule municipalities, 12 statutory cities, 160 statutory towns, 1,522 metropolitan districts, 178 school districts, and 2,033 other local governments providing financing for a wide array of specific services and public improvements. Local governments vary widely in their reliance on major taxes and other financing mechanisms, and many have the authority under Colorado law to deviate from the state's tax base by taxing items that the state does not tax or exempting items that the state does tax. As a result, tax collections vary among Colorado local governments, and each local government will be affected by aging in different ways. For this reason, it was not possible within existing time and resources to conduct individual analyses of each local government to assess the exposure of their particular revenue systems to the age demographic shift. The extent to which any government will be impacted is dependent on how reliant that government is on each of the major sources of revenue.

Table 3 and Figure 12 below show the relative reliance, by level of government, on the major sources of tax revenue. In combination with our analysis of the impact of aging on each of the major tax revenue sources, the generalized impact of aging on local government finance can be seen.

**Table 3. Average Reliance of State and Local Governments by Major Tax**

| Level of Government | Average Reliance on Individual Income Tax | Average Reliance on Sales Tax | Average Reliance on Property Tax | Average Reliance on Other Sources of Tax Revenue |
|---|---|---|---|---|
| State (General Fund, FY16 data) | 65.47% | 26.61% | 0% | 7.92% |
| Municipal (2013 data) | 0% | 76.22% | 13.56% | 10.22% |
| County (2013 data) | 0% | 25.5% | 68.99% | 5.51% |
| Special District | Although some special districts and taxing authorities levy a sales tax, most are primarily funded by the property tax, charges and fees. These two revenue sources may not be as affected by aging. | | | |

Sources: Department of Local Affairs, Local Government Compendium, 2013; Colorado Legislative Council Forecast, September, 2016.

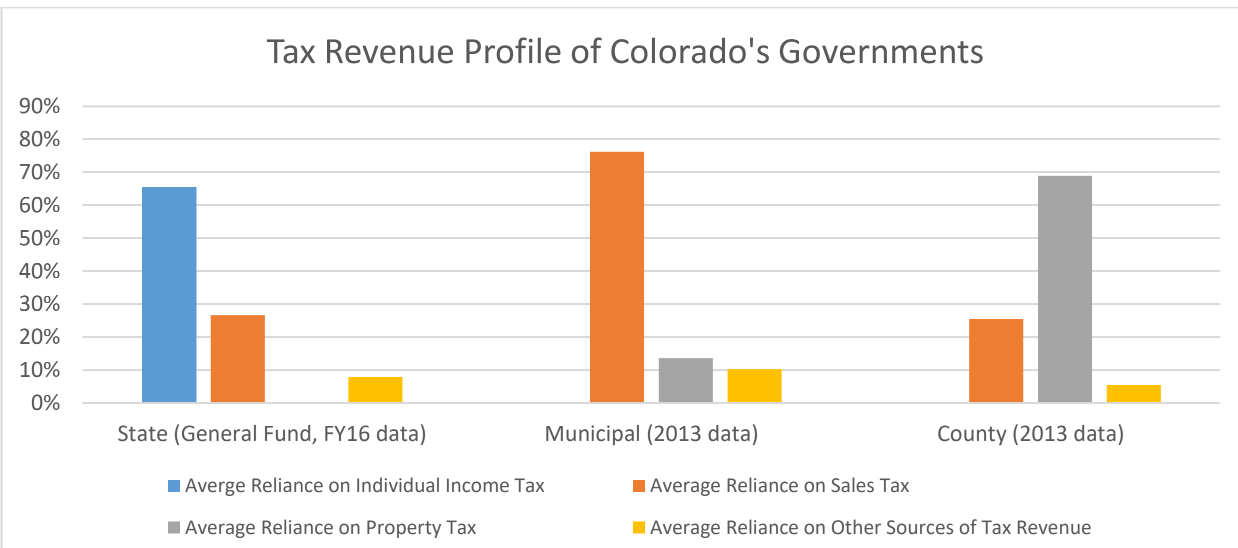


Figure 12. Tax Revenue Profile of Colorado's Governments. Sources: Department of Local Affairs, Local Government Compendium, 2013; Colorado Legislative Council Forecast, September, 2016.

### County and Municipal Sources of Non-Tax Revenue

Many local governments have sources of revenue that are not tax revenue sources. Figure 13 and Figure 14 show the average distribution of non-tax revenue by source for Counties and Municipalities. While we know that aging will have direct impact on tax revenue, the impact of aging on the other sources of local government revenue is less clear.

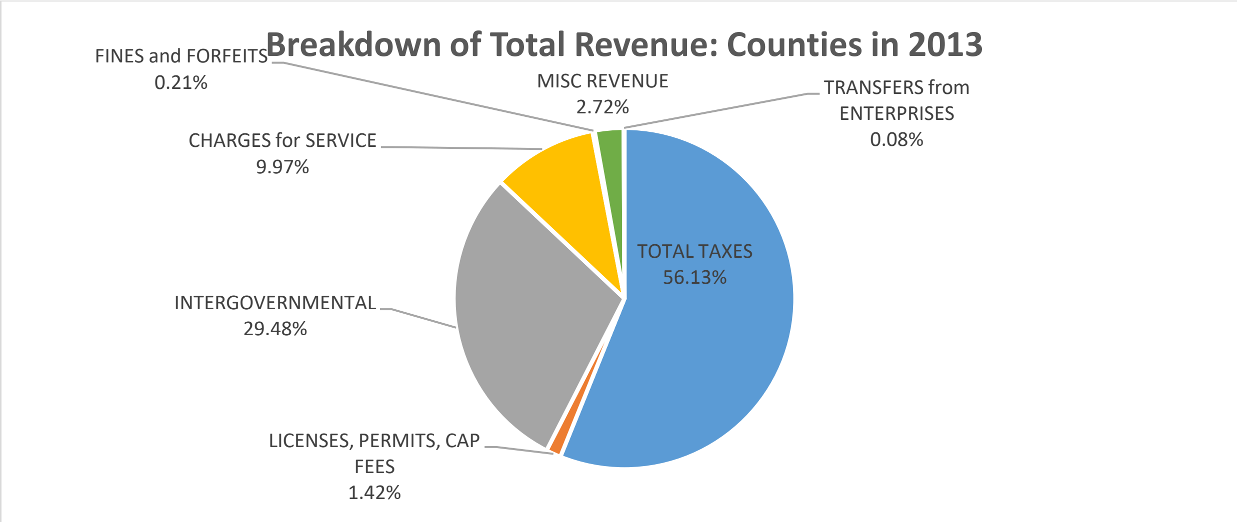


Figure 13. Breakdown of Total Revenue: Counties in 2013. Source: Department of Local Affairs, Local Government Compendium, 2013

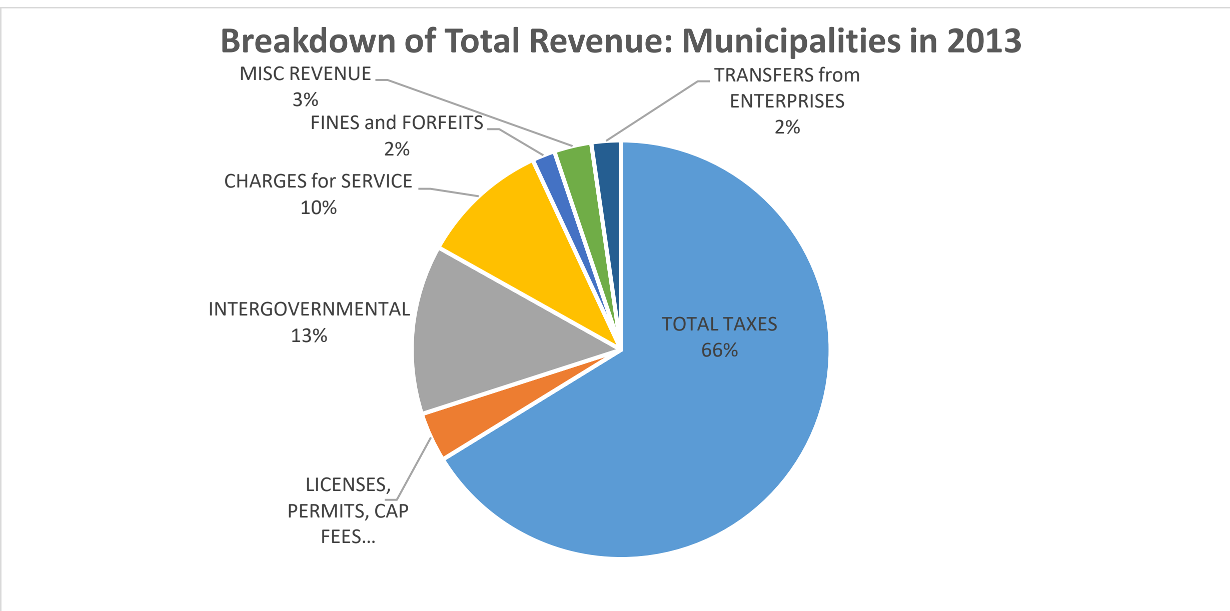


Figure 14. Breakdown of Total Revenue: Municipalities in 2013. Source: Department of Local Affairs, Local Government Compendium, 2013.

## ***<u>The Senior and Disabled Veteran Property Tax Homestead Exemption</u>***

In the November, 2000 general election, Colorado voters passed a constitutional amendment granting a property tax exemption for seniors. The exemption is available to qualifying senior citizens and the surviving spouses of seniors who previously qualified. The three basic requirements are; 1) the qualifying senior must be at least 65 years old on January 1 of the year in which he or she qualifies; 2) the qualifying senior must be the owner of record, and must have been the owner of record for at least ten consecutive years prior to January 1; and 3) the qualifying senior must occupy the property as his or her primary residence, and must have done so for at least ten consecutive years prior to January 1. In November of 2006, disabled veterans were added to the program, and in 2015, the surviving spouses of disabled veterans were added. For all those who qualify, 50 percent of the first $200,000 of actual value of the applicant's primary residence is exempted. The state is required to reimburse county treasurers for the revenue lost by local governments. It is important to note that the General Assembly has the authority to reduce the percentage of assessed valuation threshold from 50 percent of the first $200,000 in value downward as far as 0 percent. This allows the state to reduce or eliminate the need to fund the costs of the exemption borne by local governments in years when sufficient state funds are not available. This option was exercised during the last two recessions. However, in years in which the General Assembly opts to fund the exemption, there is a direct impact to the state General Fund.

For fiscal years 2002-03, 2006-07 through 2008-9, and 2012-13 through 2015-16, the state fully reimbursed local government revenue losses resulting from the program. In fiscal years 2003-04 through 2005-06, the General Assembly reduced the exemption percentage to 0 percent, thus suspending the exemption as well as the requirement for the state reimbursement, and in fiscal years 2009-10 through 2011-12, only the disabled veteran program was funded.

In 2015, 239,106 properties owned by seniors and 4,235 properties owned by disabled veterans qualified for the exemption.  Figure 15 below compares the cost of state reimbursement to local governments under the program from FY 2002-03 through FY 2015-16 to the over age 65 population during the period. For fiscal years 2005-06 through 2008-09 and fiscal years 2012-13 through 20015-16, costs for the disabled veteran program constitute less than 2 percent of the total cost for local government reimbursements.

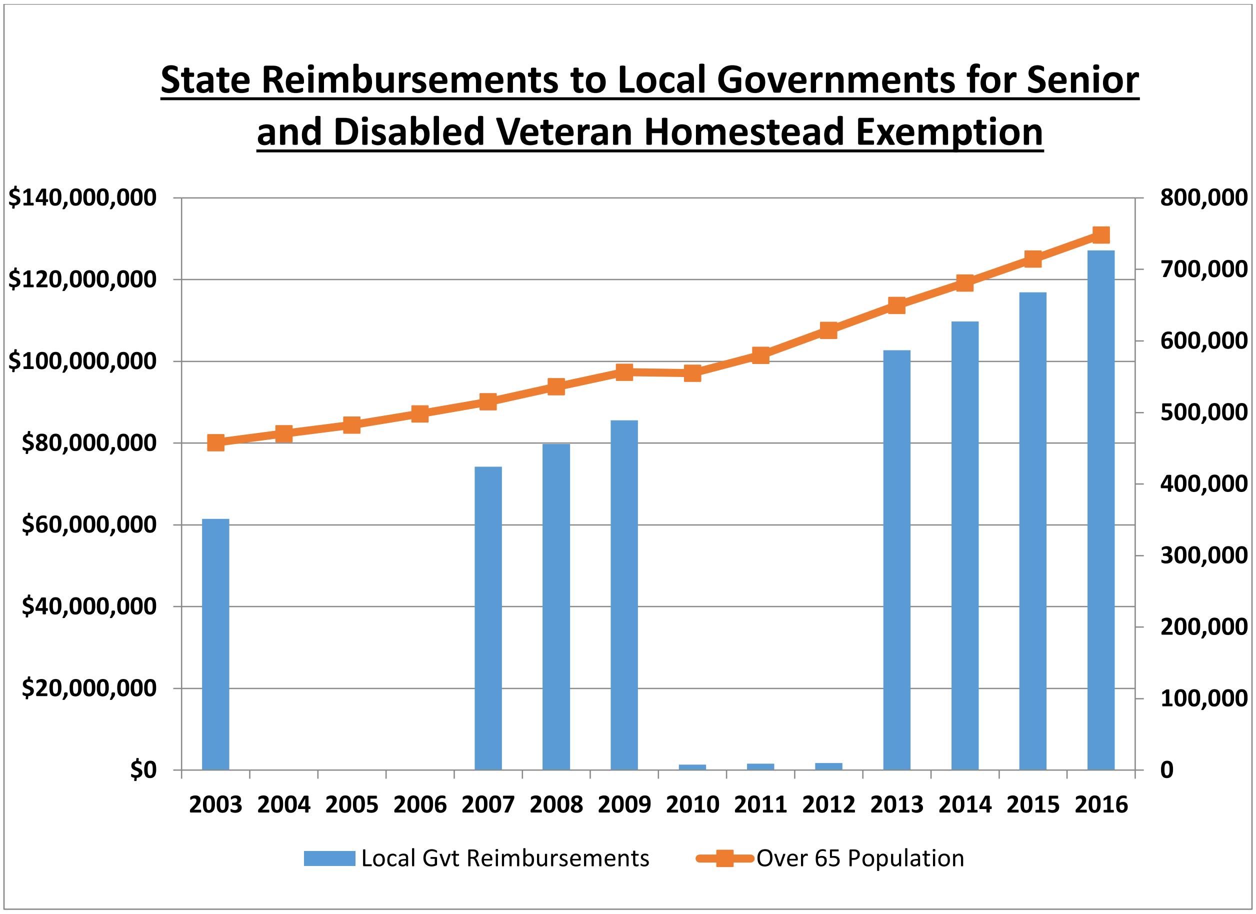


Figure 15. State Reimbursements to Local Governments for Senior and Disabled Homestead Exemption Source: Colorado Department of Local Affairs, Division of Property Taxation Annual Reports and State Demography Office forecasts

**Methodology**

Assuming full funding for the program, five factors are considered to affect the cost of the program:

1. Growth in the qualifying senior population;
2. Growth in residential property values;
3. Growth in local government property taxes;
4. The exemption limit of $100,000 of valuation for each qualifying property; and
5. The requirement that the owner must have been the owner of record and continuously occupied the property for the prior 10 consecutive years.

The first 3 of these factors cause growth in the cost of the program while the last 2 factors work to dampen the growth to some extent. As the number of qualifying seniors and disabled veterans increases, more properties will become qualified to receive the exemption, and as residential property values increase, the value of each exemption rises. In addition, as property tax mill levies increase, the tax benefit of each exemption rises so there continues to be a growing loss of revenue to local governments and corresponding need for the state to reimburse local governments. On the other hand, however, once a property's $100,000 limit is reached, further increases in home values do not in and of themselves result in increased costs. Also slowing the growth in cost pressure, as seniors age, they often downsize, losing the exemption entirely due to the 10 consecutive year prior ownership/residency requirement.

We used two approaches to forecast the impact of aging on the state General Fund. Both approaches use the forecast of percentage increase in the over 65 population from the State Demography Office throughout the forecast horizon of 2030. The first model added our CFC forecast for the Denver Boulder Greeley CPI-All Items to the percentage increase in senior population. This approach assumed that CPI broadly reflects components affecting housing costs and housing cost increases (as housing values and property taxes are likely reflected in the rental equivalence component of housing), but is somewhat distorted by unrelated cost growth or decline in other components of the CPI market basket.

For the second approach, we added percentage increases in our CFC forecast of growth in the valuation of the residential class of property to the percentage increase that the over 65 population exceeded overall population growth calculated from State Demography Office forecasts through 2030. The residential class is comprised of 13 subclasses of property, none of which accurately reflects owner occupied primary residences that meet the 10 year ownership test. Growth in the broad residential property class does however depict the rising housing values which will continually drive up the cost of the homestead exemption.

Comparing the results of both methods to actual program costs since resumption of the program in FY 2012-13, the second method yielded results closer to, but slightly higher than the actuals. As a result, the second approach was dampened by an adjustment factor to forecast the cost of the program through FY 2029-30.

**Findings**

The burden for the state to reimburse local governments for the lost revenue from the senior and disabled veteran homestead exemption program will grow significantly throughout the forecast horizon of FY2029-30. Our forecast shows the cost of the program will grow from the 2015-16 level of $127.1 million to $297.3 million by FY 2029-30. Cost growth will be as high as 10.7 percent for FY 2016-17 but slow gradually throughout the forecast period to 4.7 percent in FY 2029-30 as growth in the senior population slows. Figure 16 below shows the growth in forecast cost and growth in the over age 65 population during the period.

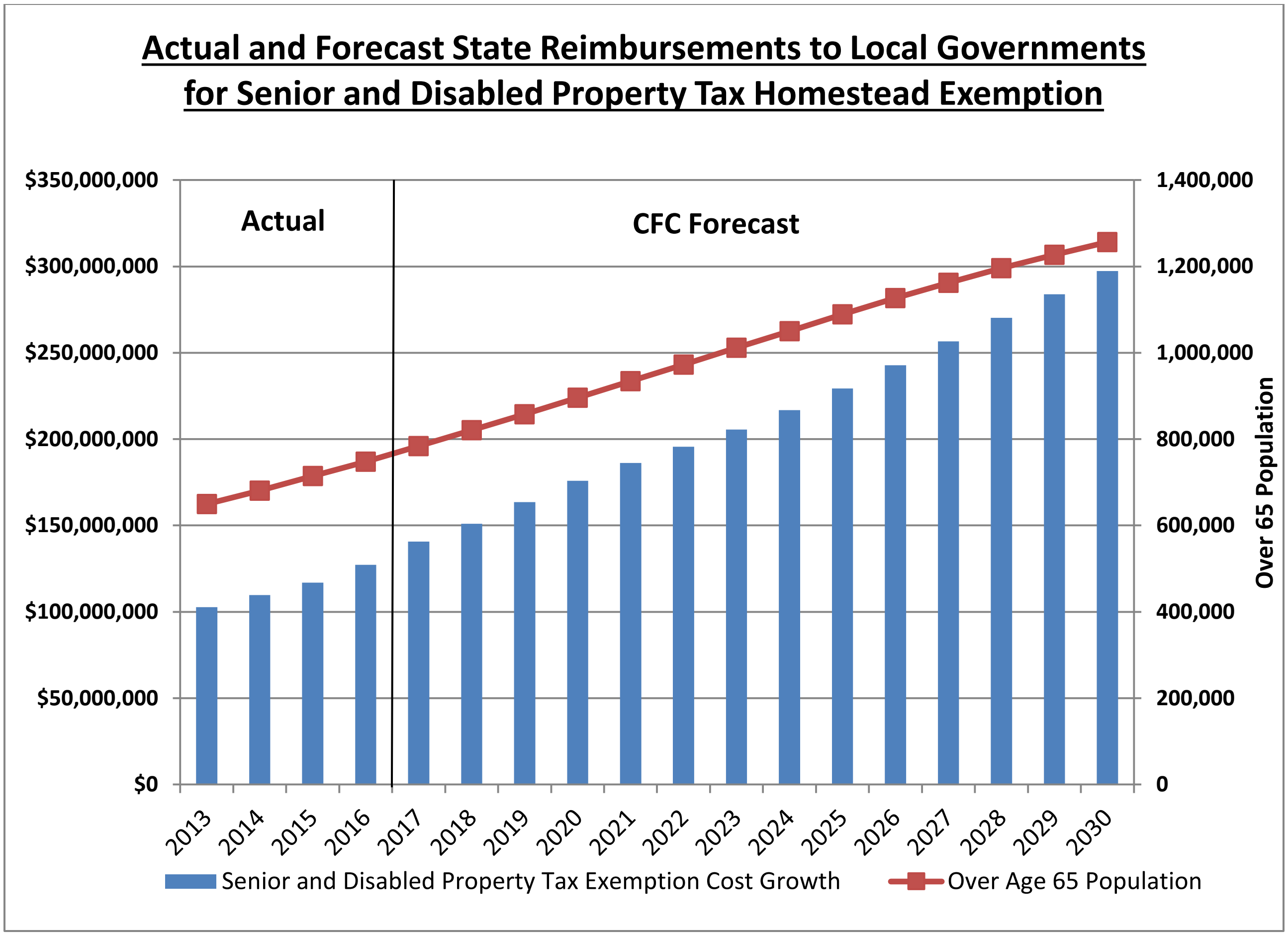


Figure 16. Actual and Forecast State Reimbursements to Local Governments for Senior and Disabled Homestead Exemption Source: Colorado Department of Local Affairs, Division of Property Taxation Annual Reports, State Demography Office forecasts

## The Effects of Aging on Colorado's Expenditures

### ***Medicaid***

Medicaid is a jointly funded federal/state program to provide medical services to eligible low income populations. In Colorado, Medicaid is administered through the Department of Health Care Policy and Financing (HCPF). HCPF's FY 2015-16 General Fund appropriation of $2.5 Billion represented 26% of the total General Fund and when combined with the $1.03 Billion in cash funds and $5.34 Billion in federal funds, the Medicaid administering agency is the largest department in the state government.

In FY 2015-16, the Medicaid program served 1.278 million Coloradans. With the state population averaging just over 5.49 million over those two years, the Medicaid program currently serves between one in five and one in four Coloradans. Of those served, just over 75,000 or 3.09% of the Medicaid population received eligibility as Adults 65 and Older (OAP-A) or Partial Dual Eligibles[3], the cohorts serving aged Coloradans. Yet, expenditures for these two cohorts represented 16.73% of total Medicaid expenditures in FY 2015-16. Covered populations in these two cohorts receive services including long term care (including nursing home and home based care), assistance with Medicaid premiums and copays for low income elderly populations, acute care for the Medicare ineligible, durable medical equipment and other home based and community services. As Colorado's population ages, providing these services will place additional strain on the Medicaid and ultimately the state budget. The remainder of this section covers the magnitude of the anticipated pressure on the Medicaid budget.

**Methodology - Forecasting Aging Pressures on Medicaid**

Medicaid expenditures are driven by two main factors: the number of covered participants in the program and the per capita cost of providing service. Our forecasts project each of these components separately.

*Forecasting the cohorts of Medicaid enrollees*

HCPF maintains and regularly updates Medicaid cohort forecasts. At the time of this analysis, the HCPF forecasts had a horizon of FY 2017-18 with actual data through FY 2014-15. For this analysis, the HCPF forecast through FY 2017-18 was used as the jumping off point for the forecast through FY 2029-30.

Similar to the HCPF approach to forecasting caseloads, we used a series of methodological approaches to establish candidate long-term forecasts including ones based on trend, the relationship to the growth rates forecast by the Colorado State Demography Office for the reference populations for each of the cohorts, and historical and short-term HCPF projected rates of growth for the relevant cohorts. From that process, we developed baseline cohort forecasts for all eligibility groups. In particular interest to this analysis are the forecasts for the aged cohorts - Adults 65 and Older (OAP-A) or Partial Dual Eligibles.

These baseline forecast assumptions were then evaluated against the previous long-term Medicaid forecasts we completed in our previous work including a 2012 study of Medicaid expansion and the more recent 2013 study of the long term fiscal sustainability of Colorado state government. In addition, the forecast assumptions were reviewed by other Medicaid experts in the state**.** Both review approaches ultimately helped support the selection of the selected forecast approach.

Our forecast approaches for the two aged cohorts are as follows:

<u>Adults 65 and Older (OAP-A)</u> – For this cohort, we assumed a 2% annual growth rate from the end of the HCPF forecast in FY 2017-18 until FY 2029-30. Historically this cohort had been growing at a rate of just of 1.5% annually. Increasing the long term growth rate to 2% resulted in a more reasonable forecast of

[3] The Congressional Budget Office glossary contains the following definition of partial duals "Dual-eligible beneficiaries who qualify to have Medicaid pay some of the expenses they incur under Medicare. For all partial duals, Medicaid pays the premiums for Part B of Medicare (and for Part A, if applicable). For some partial duals (depending on the state they live in and their income and assets), Medicaid also pays part or all of the cost-sharing amounts they owe under Medicare." See https://www.cbo.gov/publication/44309.

the share of the reference population of adults 65 and over who will be Medicaid eligible in the future. With a growth rate of 2% to the year 2030, the adults over 65 cohort grows from the current level of 42,218 to 54,723 in 2030, but with a resulting fall in the share of the reference population from 5.77% to 4.41%.

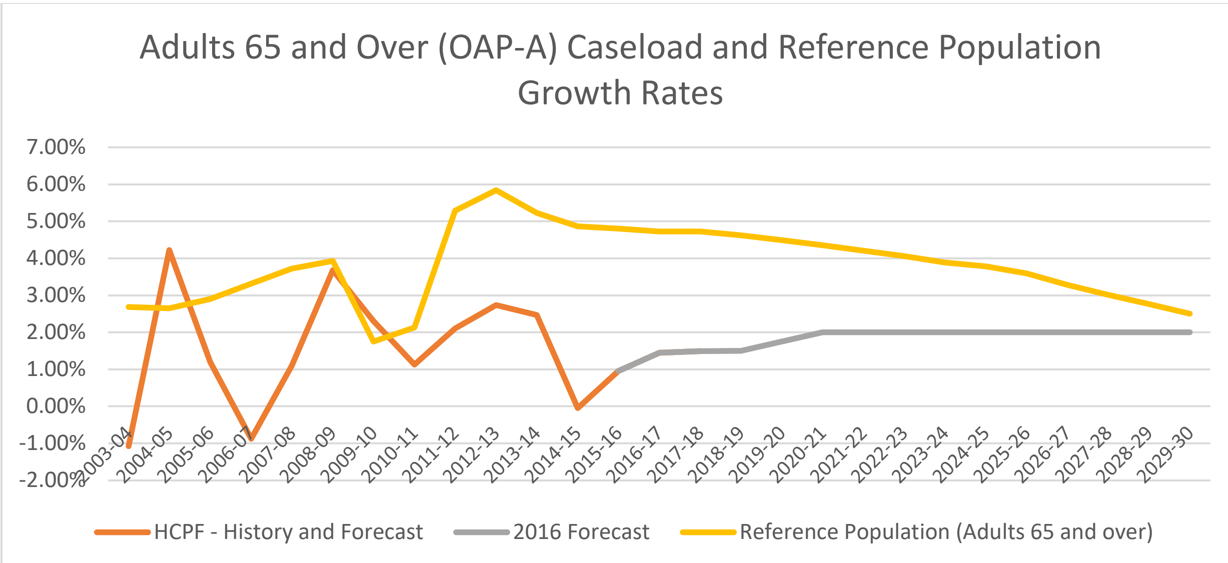


Figure 17. Adults 65 and Over (OAP-A) Caseload and Reference Population Growth Rates. Source: Colorado Department of Health Care Policy and Financing, Colorado Futures Center forecast, State Demography Office.

<u>Partial Dual Eligibles</u> – We modeled this cohort with an econometric relationship to its underlying population of adults 65 and over. This forecast yielded a reasonable cohort forecast that grew from 32,835 in FY 2015-16 to 79,293 in FY 2029-30 and with cohort growth rates falling to a more sustainable range of 3.5% at the end of the forecast horizon. Historically dual eligibles have grown faster than the 65 year and over cohort.

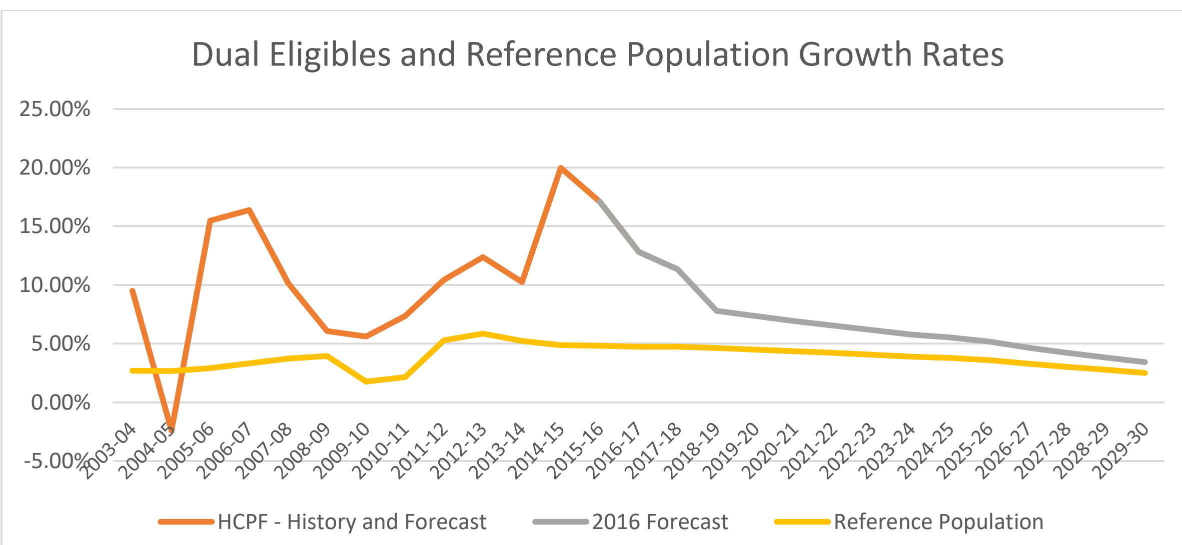


Figure 18. Dual Eligibles and Reference Population Growth Rates. Source: Colorado Department of Health Care Policy and Financing, Colorado Futures Center forecast, State Demography Office.

*Forecasting per capita costs*

Most long term forecasting of cost inflation for Medicaid follows the methodology of the Congressional Budget Office which inflates costs program-wide by multiple of the base level of inflation in the overall economy. In our previous work on Medicaid, we too have followed the methodology of the Congressional Budget Office. For this analysis, however, that approach was not appropriate because it masks the difference in inflationary pressures in per capita costs among the cohorts of eligibility. Particularly germane for this project, the cohorts affected by aging tend to inflate at rates that exceed all other cohorts except for the disabled populations.

HCPF recognizes the need for granularity in the inflation forecasts, and provides three year forecasts of per capita costs by eligibility cohorts. For this analysis, we used HCPF's forecast through 2018 and then held the out-year inflation forecast constant at the last year of HCPF's forecast. The one exception was for cohorts for which the last year of the forecast was for negative rates of inflation. In those cohorts, we assumed no cost growth to 2030.

**How will Aging Pressure Medicaid in Colorado?**

Aging will pressure Medicaid in two distinct and interrelated ways. First, the covered individuals in the aging related cohorts are forecast to be among the fastest growing cohorts out to the year 2030. While the total program enrollment is projected to grow at 1.67% in 2030, Adults 65 and Over and Partial Dual Eligibles are projected to grow at 2% and 3.42%, respectively.

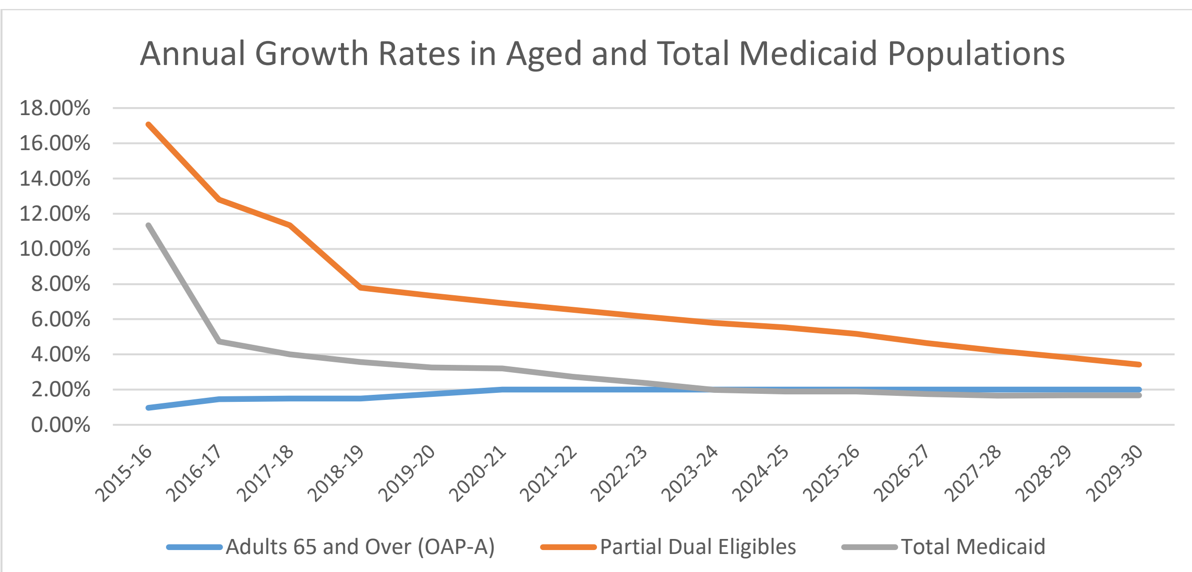


Figure 19. Annual Growth rates in Aged and Total Medicaid Populations. Source: Colorado Department of Health Care Policy and Financing, Colorado Futures Center forecast.

As a result, aged enrollees as a share of the total enrollees in the program are projected to increase from 3.09% presently to 3.69% in 2030.

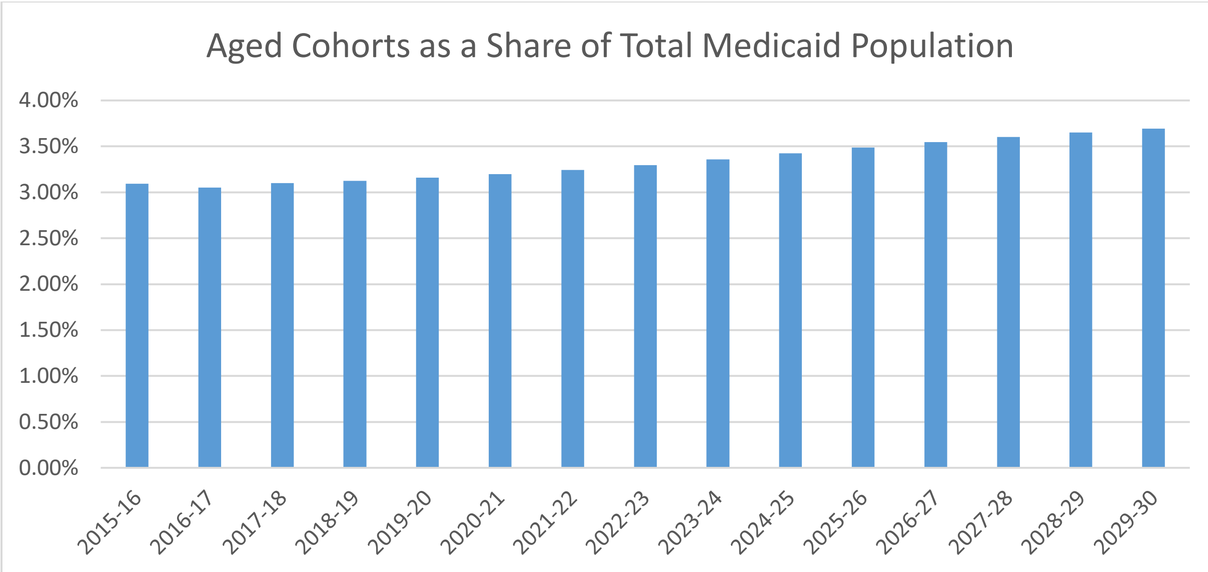


Figure 20. Aged Cohorts as a Share of Total Medicaid Population. Source: Colorado Futures Center forecast

And, costs per enrollee to cover the age related cohorts are forecast to be among the fastest to inflate. As demonstrated in the graph below, only the per capita medical services premium costs for the foster care cohort are projected to inflate at a rate in excess of the two aged cohorts. While costs for the aged in the mental health are not projected to inflate as at rapid a pace, the mental health program is a much smaller portion of the total Medicaid program than the medical portion.

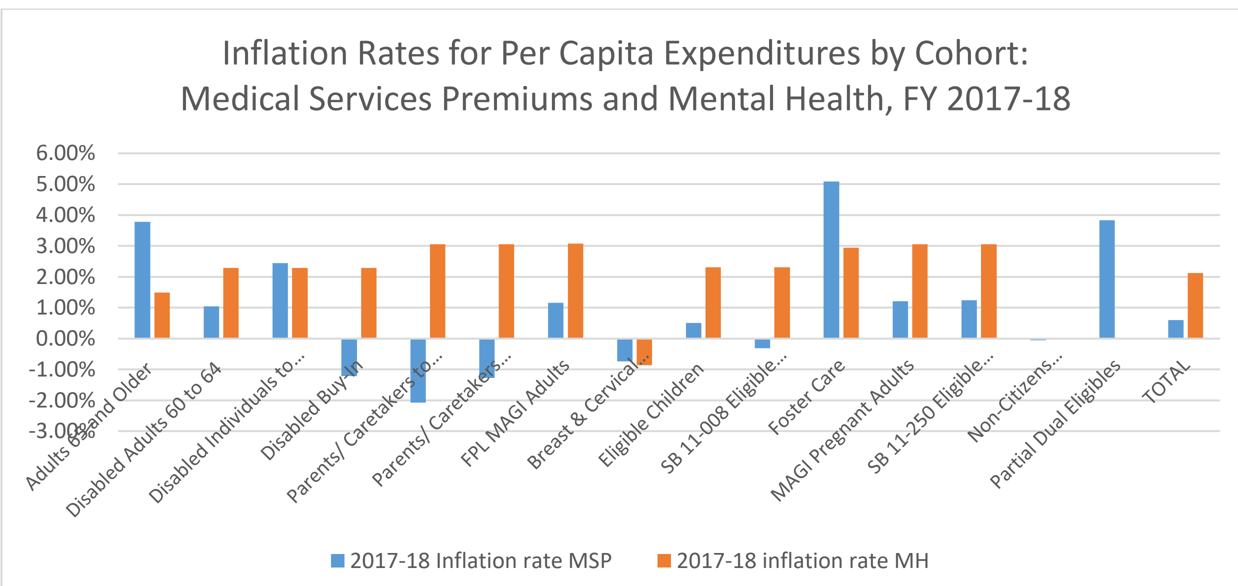


Figure 21. Inflation Rates for Per Capita Expenditures by Cohort: Medical Services Premiums and Mental Health, FY 2017-18. Source: Colorado Department of Health Care Policy and Financing

***Taken together, these two pressures result in the finding that age related expenditures in Medicaid will grow from 16.73% of total expenditures today to 21.7% in 2030. By 2030, over one out of every five dollars spent in the Medicaid program will be spent on the aged populations and total***

***expenditures for the aging cohorts are projected to grow from just over $1.04 Billion in FY 2015-16 to just over $2.325 Billion in FY 2029-30, an increase of more than 100% in 15 years. Currently the state funding for the age-related Medicaid cohorts comes from the General Fund. With no changes to this policy, the impact of aging on Medicaid expenditures will directly impact the General Fund.***

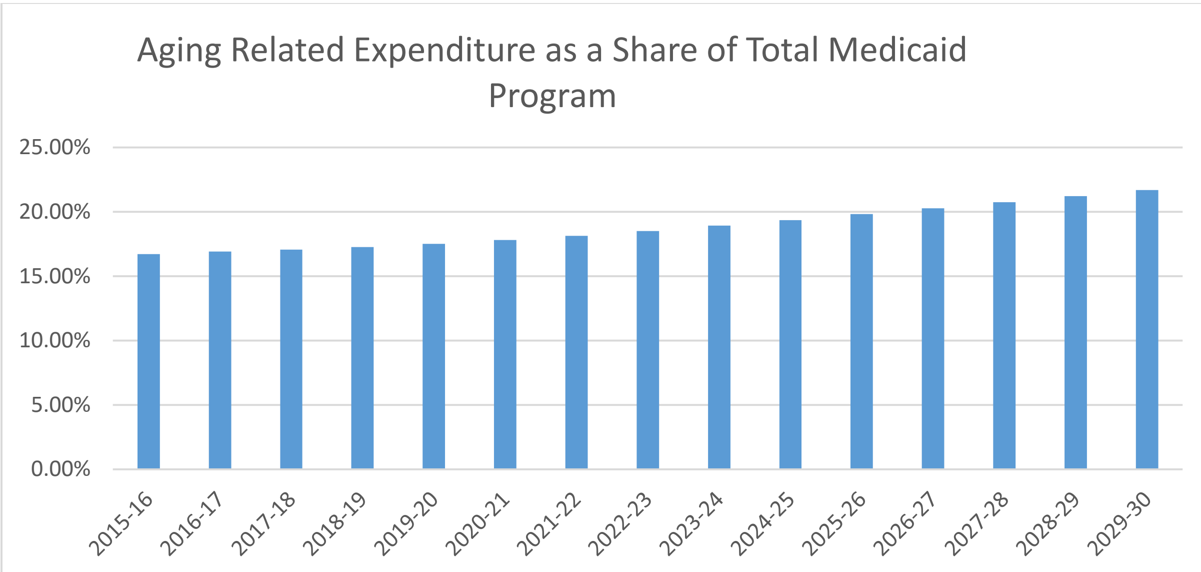


Figure 22. Aging Related Expenditure as a Share of Total Medicaid Program. Source: Colorado Futures Center forecast

Finally, it is important to note that the Medicaid expansions undertaken by the state in HB 09-1293 and SB 13-200 are serving to dilute the impact of the growing share of aging in the Medicaid program. Because many more Coloradans under the age of 65 received and are projected to receive coverage through these two expansions, the aged share of total program is less than it would had been had the expansions not occurred. Figure 23 shows that aging related spending would have reached almost 29% of total program expenditures in FY 2029-30 had expansion not occurred.

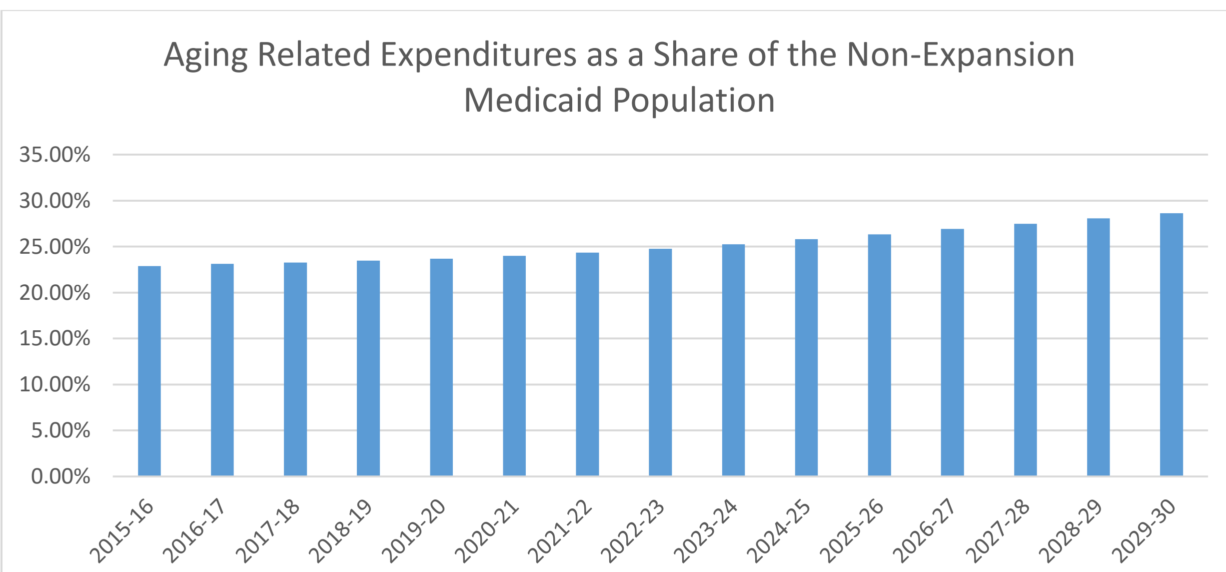


Figure 23. Aging Related Expenditure as a Share of Non-Expansion Medicaid Program. Source: Colorado Futures Center forecast

## ***Other State Departments***

The aging of Colorado's population has a significant and increasing impact on the programs, services and budgets of multiple state departments. In fact, it is difficult to identify any state department that is not affected in some way by the growth in the number of older Coloradans. While some programs are age-specific and it is possible to clearly identify the fiscal impacts and implications for state government (e.g. the Old Age Pension, State Funding for Senior Services), more frequently the impact of the aging population is experienced as part of budgets and programs that are not age-specific, and are funded through multiple sources of revenue – federal funds, fees, cash funds, general tax revenues, or private and public grants (e.g. housing, transportation, professional and facility licensing, behavioral health).

As demonstrated on the Table 4, the 80+ cohort is the fastest growing segment of Colorado's population, and it is this age group that is most likely to need support services that are funded in whole or part from public resources. The purpose of this section of the report is to identify key program areas within state government where that impact is likely to be seen.

**Table 4. Colorado Population Increases Compared to Increases for Selected Senior Cohorts**

| Year | Total CO Population | Population Incr. | % Incr. | 65+ Population | 65+ Incr. | % Incr. | 80+ Population | 80+ Incr. | % Incr |
|---|---|---|---|---|---|---|---|---|---|
| 2000 | 4,338,785 | | | 417,987 | | | 104,552 | | |
| 2015 | 5,443,555 | 1,104,770 | 25.4 | 714,448 | 296,461 | 70.9 | 166,751 | 62,199 | 59.5 |
| 2030 | 6,970,593 | 1,526,978 | 28.1 | 1,256,291 | 541,843 | 75.8 | 332,580 | 165,829 | 99.4 |
| 2000 to 2030 | | 2,631,748 | 60.7 | | 838,304 | 200.5 | | 228,028 | 218.0 |

Source: Colorado State Demography Office

In our effort to identify the fiscal commitment of the state of Colorado to programs serving older Coloradans, we reviewed each state department's website to identify programs that were known to serve older Coloradans, reviewed the annual State Appropriations Acts (the "Long Bill"), and consulted with about two dozen program managers in multiple state departments. It became clear that an accurate and complete quantifying of the fiscal impact resulting from the aging of Colorado's population across the programs of state government would be very difficult to accomplish. Instead, we determined that a more realistic task within available time and resources was:

1. to identify several programs directed specifically to older adults and where age-specific data are available; and
2. to identify several program areas within state government where services to and for older persons are included within the broader mission of the agency or program - but where age-specific data are not available to accurately assign a specific amount to services for older adults.

We acknowledge that this section of the report represents just a partial recap of the impact of the aging of Colorado on the programs, services and budgets of state government. For instance, the report does not include programs and services for older Coloradans in the Departments of Law, Higher Education, Public Safety, Regulatory Agencies, and other Departments – each of which have services for older adults. Although time and resources did not allow a total survey of all state agencies, the report provides verification that the impact of the growth of Colorado's older population is experienced throughout state government.

**AGE-SPECIFIC PROGRAMS**

**Old Age Pension Program - Department of Human Services (DHS)**

Colorado's Old Age Pension Program (OAP) is a state entitlement program that provides cash assistance to Colorado residents over the age of 60 who meet income and resource eligibility criteria. The OAP was established in 1937 by a constitutional initiative passed in the election of 1936. The original monthly payment amount was $45. The 2016 maximum grant payment for an individual is $771. Other income available to that person (e.g. Social Security) reduces the OAP payment by a similar amount. Average monthly benefit amounts over the past 15 years have ranged from $166 in FY 2000/01 to $337 in FY 2015/16. Cost drivers include: the number of eligible individuals who apply for the program; the average monthly payment per individual; and annual cost of living adjustments – generally matching federal COLA adjustments for Social Security and Supplemental Security Income.

**Table 5. Old Age Pension Program Expenditures, Average Caseload, and Average Monthly Grant in 5 Year Increments**

| State Fiscal Year | Expenditures | Average Caseload | Average Monthly Grant |
|---|---|---|---|
| 2000/01 | $48,516,132 | 24,349 | $166.04 |
| 2005/06 | $71,965,702 | 24,370 | $231.95 |
| 2010/11 | $78,342,018 | 22,953 | $284.43 |
| 2015/16 | $93,355,468 | 23,058 | $337.39 |

Source: Colorado Dept. of Human Services.

Article XXIV of the Colorado state constitution assigns authority for the program to the State Board of Human Services. The Board determines eligibility criteria and maximum monthly grant payment amounts. Excess revenues generated by the OAP tax sources specified in the constitution that are not required for the program "spill over" into the General Fund (GF) and are a major source of revenues for the overall state budget. Therefore, every dollar spent on the OAP is a dollar not available for the GF.

There are two major categories of OAP recipients: those age 60-64 ("OAP B") and those age 65 and older ("OAP A"). Although Colorado has experienced a 71% growth in the total number of persons aged 65+ between 2000 and 2015, the average OAP caseload declined by 5.3%. Total expenditures have increased by $44.8 million over that same period. While there has been a decrease in the total recipients of the OAP, there has been an increase over the past several years in the number of OAP B recipients. Between 2010 and 2015, those on OAP A decreased 8.2%, from 17,627 to 16,176, while those on OAP B increased 29.4% from 5,316 to 6,880. OAP B recipients generally rely more heavily on the OAP than those on OAP A, with average monthly payments in 2015 being $514 for those on OAP B, and $262 for those on OAP A.

**Older Americans Act – DHS**

The federal Older Americans Act was first passed by Congress in 1965, the same year that Medicaid and Medicare were established. The Act creates an "Aging Network" of state and local agencies to plan and deliver a wide array of community-based services to persons over the age of 60 – with the targeting of its resources to those of the greatest social and economic need. Colorado's "State Unit on Aging" is part of the Department of Human Services, and 16 "Area Agencies on Aging" (AAAs) are responsible for the planning and delivery of services in local communities throughout the state. Colorado receives an annual grant from the federal Department of Health and Human Services based on our state's percentage of the nation's 60+ population. The state in turn allocates dollars to each of the AAAs based on a formula that includes the following criteria: over age 60, older adult minorities, older adults in poverty, individuals over age 75, and older adults living in rural areas. There are both state and local matching requirements for administration and service delivery as a condition of eligibility for the federal funds. While the program is not an entitlement, and is not means tested, its resources are targeted to individuals at greatest social and economic need. The average age of persons served through the program is 78. In this past fiscal year, over 50,000 unduplicated individuals were served. Service priorities for funding are determined by a needs assessment process that includes the input of local consumers of service.

A summary of the funding levels for the Older Americans Act since 2000 is noted in Table 6 below:

**Table 6. Older Americans Act Funding Since FY 2000-01**

| Older Americans Act | |
|---|---|
| 2000/01 | 8,398,855 |
| 2005/06 | 12,493,086 |
| 2010/11 | 13,146,733 |
| 2015/16 | 15,694,979 |
| 2016/17 | 16,240,345 |

Source: Department of Human Services

Future funding levels for the Older Americans Act will depend primarily on two factors: the level of appropriation determined by the federal budget; and Colorado's percentage of the nation's population of persons over the age of 60.

**State Funding for Senior Services – DHS**

In recognition of the need for additional resources beyond the Older Americans Act to meet the needs of older Coloradans, and with the effective state legislative advocacy of groups such as the Colorado Senior Lobby and AARP who formed an "Older Coloradans Coalition," the legislature passed HB00-1072 in 2000 session of the General Assembly. The bill created "The Older Coloradans Program" and the "Older Coloradans Cash Fund" (OCCF). The appropriations clause for HB00-1072 appropriated $3 million into the OCCF from the OAP sales and use taxes prior to excess revenues spilling over into the General Fund. The bill specified that the funds were to be distributed by a formula to the Area Agencies on Aging (AAAs), adding to the funds they received under the federal Older Americans Act. Although the funding for the monthly cash assistance to persons eligible for the Old Age Pension is not subject to appropriation by the General Assembly, but is shown in the Long Bill "for informational purposes only," HB00-1072 specified that the OCCF is subject to appropriation. The original language in that bill limited the use of the funds to one-time purposes that "would not create a need for ongoing state funding." That limitation was removed in a subsequent session, and the OCCF has become a major source of state support for community based services through the AAAs. It is identified in the Long Bill as "State Funding for Senior Services" (SFSS). Since funds appropriated from the OCCF are in essence dollars that do not spill over into the GF, the General Assembly has chosen over the years to appropriate additional funding for the SFSS from both the GF and the OCCF. Table 7 shows the growth of this funding over the past 16 years. The appropriation for SFY 2016-17 is approximately half GF and half "cash funds" from the OCCF.

**Table 7. State Funding for Senior Services**

| State Funding for Senior Services - SFSS | |
|---|---|
| 2000/01 | 3,000,000 |
| 2005/06 | 3,142,041 |
| 2010/11 | 9,108,282 |
| 2015/16 | 20,953,663 |
| 2016/17 | 22,831,104 |

Source: CDHS & State Appropriations Acts

Since both the Older Americans Act and the State Funding for Senior Services are available for virtually identical services for older Coloradans through the Area Agencies on Aging, Table 8 shows the progression of total combined funding of federal and state dollars for community-based senior services.

**Table 8. Total Older Americans Act and State Funding for Senior Services**

| Total OAA and SFSS Funding | |
|---|---|
| 2000/01 | 11,398,855 |
| 2005/06 | 15,635,127 |
| 2010/11 | 22,255,015 |
| 2015/16 | 36,648,642 |
| 2016/17 | 39,071,449 |

Source: CDHS & State Appropriations Acts

While age is not the sole determinant of the growth of OAA and SFSS program funding, it is the major driver for expenditures in both of these programs. By holding all other economic and demographic drivers constant and interpolating the growth of historical funding, we find that the greatest age related pressures on these programs is happening currently and through the remainder of the decade. In the 2020s and through to 2030, age related pressure alone begins to abate and the real growth rates are projected to return to historical rates experienced by the state before the beginning of the retirement of the baby boom generation.

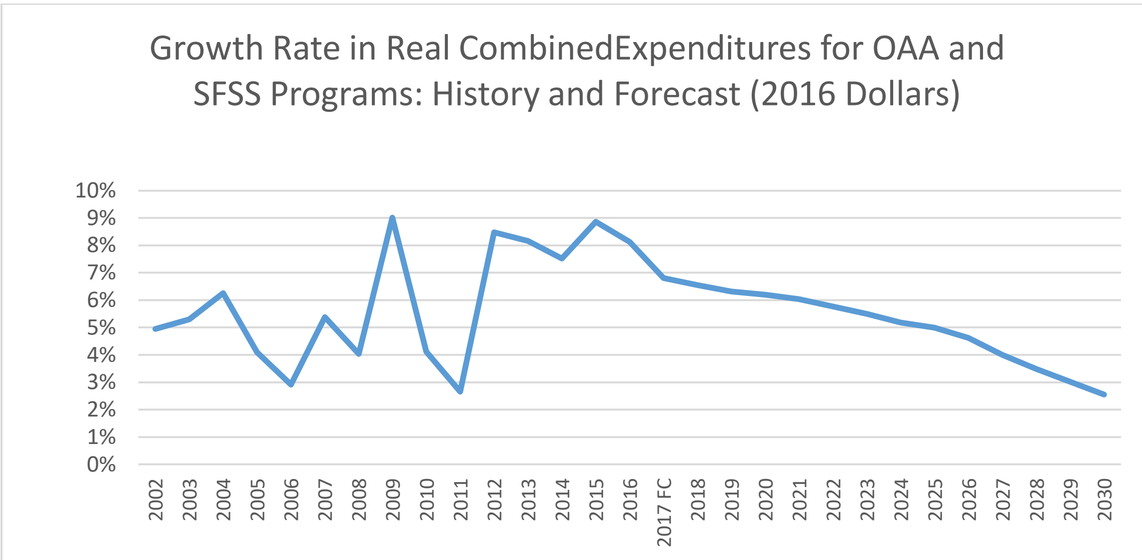


Figure 24. Growth Rate in Real Combined Expenditures for OAA and SFSS Programs: History and Forecast (2016 Dollars). Source: CDH and Appropriations Acts, Colorado Futures Center Forecast

**Colorado Dental Health Care Program for Low Income Seniors – Department of Health Care Policy and Financing (HCPF)**

This program, formerly the Old Age Pension Dental Program, was transferred from the Department of Public Health and Environment to the Department of Health Care Policy and Financing (HCPF) with the passage of SB14-180. Although the Program originally limited eligibility to persons receiving the OAP cash assistance grant, in recognition of the recent inclusion of dental benefits under the Medicaid State Plan, SB14-180 specified that the program was to serve low income persons over the age of 60 are economically disadvantaged and who do not have or qualify for any other dental insurance – such as Medicaid. Under rules recommended by the Dental Advisory Committee and adopted by the Medical Services Board, the term "economically disadvantaged" was denoted as a maximum income of 250% of the most current published Federal Poverty Level (FPL), thereby aligning with eligibility for Colorado's Indigent Care Program. Unlike Medicaid, the program is not an entitlement, so the funding and services are limited to whatever amount is appropriated in the "Long Bill."

A total of $2,962,510 General Fund has been appropriated each of the two years the program has been operated by HCPF. Although eligibility is up to 250% of the FPL, those actually served in the program are generally at the lower end of that eligibility scale. The Program expended all but $26,265 of the available funds prior to the end of the last fiscal year, and it is anticipated that the appropriation may be fully spent prior to the end of the current fiscal year.

**Adult Protective Services – Elder Abuse - DHS**

The Adult Protective Services program (APS) investigates and provides services to "at-risk adults." State statute defines an at-risk adult as "an individual eighteen years of age or older who is susceptible to mistreatment or self-neglect because the individual is unable to perform or obtain services necessary for his or her health, safety, or welfare, or lacks sufficient understanding or capacity to make or communicate responsible decisions concerning his or her person or affairs." (26-3.1-101 (1.5) C.R.S.). Overall supervision of the APS Program is assigned to the DHS, and administered locally by county departments of social/human services, who are charged with receiving and following up on reports of mistreatment. Multiple other agencies and individuals may coordinate with county APS programs to conduct investigations into allegations, including District Attorneys, local law enforcement, and Community Centered Boards. Legislation passed in 2013 (SB13-111) specifically created in Colorado's criminal code a mandatory reporting obligation for certain professionals to report suspected abuse, neglect, and exploitation of at-risk elders (persons age 70 and older). That legislation has resulted in an increased focus on protective services to older persons for law enforcement – and is therefore included in this age-specific section. As reported in the 2015 annual report on the APS Program by the DHS, 75% of all reports involved persons 60 years or older, and 57% of total reports involved those over age 70

APS Funding and caseload growth: The passage and implementation of SB13-111 resulted in an increased priority and identification of the funding for Colorado's APS Program. Table 9 contains the statewide county expenditures for receiving, investigating and following up on reported incidents of adult abuse, neglect or exploitation. As is noted, the implementation of mandatory reporting of suspected cases of Elder Abuse resulted in a significant increase in the number of reports and cases from the previous year.

**Table 9. Adult Protective Services Funding, Reports, and Cases**

| State Fiscal Year | Total County Department funding | Growth Rate | # of Reports | # of Cases | Growth Rate |
|---|---|---|---|---|---|
| 2011-12 | $8,503,337 | | 11,000 | 6483 | |
| 2012-13 | $9,047,098 | 4.90% | 11,539 | 6738 | 3.93% |
| 2013-14 | $10,757,532 | 2.42% | 11,818 | 6760 | 0.33% |
| 2014-15 | $13,249,769 | 41.28% | 16,696 | 8932 | 32.13% |

Source: 2015 Adult Protective Services 2014-15 Annual Report, DHS

The total funding for the program in 2014-15, including state administrative costs, data tracking system, and $1 million in General Fund support for services that was originally appropriated in SB13-111 was approximately $14.7 million. Table 10 identifies the sources:

**Table 10. Adult Protective Services Funding Sources**

| | |
|---|---|
| General Fund | $9.9 million |
| Local Match (county funds) | $2.8 million |
| Federal Funds (Title XX) | $1.9 million |

Source: 2015 APS Annual Report, DHS

## AGING-RELATED SERVICES ACROSS STATE DEPARTMENTS

The growth of Colorado's population of older adults impacts multiple departments, often in programs that serve a broad spectrum of ages, and whose funding comes from multiple sources – making it difficult to isolate the specific amount of funding support provided to older persons. Several examples of the aging impact on other state services and programs are noted below:

### Colorado Department of Public Health and Environment (CDPHE) - Health Facility Oversight and Licensing

One of the CDPHE's major responsibilities related to aging is the licensing and oversight of community-based healthcare services provided through long term care facilities and through healthcare and personal care services provided in the individual's home. This responsibility is funded primarily by Medicaid, Medicare, and fees paid by the agencies that are licensed, with comparatively little General Fund support. Their FY 2016-17 funding is outlined in Table 10.

**Table 11. FY 2016-17 Health Facility Licensing Funding Sources**

| Funding Source | Amount (rounded figures)) |
|---|---|
| General Fund | $265K |
| Cash Funds | $3.8M |
| Medicaid | $5.4M |
| Medicare | $5.4M |

Source: Colorado Department of Public Health and Environment

Table 12 shows the impact caused in part by the growth of Colorado's older population. Also evident is the preference of individuals for care in their own homes, and for assisted living residences (ALR) over nursing homes.

**Table 12. Facility and Bed Counts for ALRs, HCAs, and Nursing Homes: 2012 thru 2016**

| | 07/01/12 | 07/01/13 | 07/01/14 | 07/01/15 | 07/01/16 |
|---|---|---|---|---|---|
| ALR | 562 facilities, 17,222 beds | 569 facilities 17,791 beds | 589 facilities 18,993 beds | 620 facilities 20,026 beds | 645 facilities 21,082 beds |
| Nursing Home | 214 facilities 20,349 beds | 217 facilities 20,558 beds | 217 facilities 20,565 beds | 219 facilities 20,777 beds | 222 facilities 20,874 beds |
| HCA – A (healthcare) | 236 facilities | 249 facilities | 249 facilities | 265 facilities | 278 facilities |
| HCA – B (personal care) | 311 facilities | 317 facilities | 347 facilities | 366 facilities | 381 facilities |

Source: CDPHE

The cost of care for individuals receiving facility-based or in-home care comes from a variety of sources, depending on the individual's income, resources, eligibility for Medicaid or Medicare or for VA benefits, and availability of private insurance. Staff from CDPHE point out that as the number of facilities increase, the oversight costs increase as well.

**Prevention and Health Promotion Services – CDPHE**

The CDPHE also administers an extensive array of prevention and health promotion services for issues that impact older adults. Those services include prevention for:

- falls,
- suicide,
- breast and cervical cancer,
- cardiovascular disease,
- diabetes and other chronic diseases.

Health promotion programs are in the areas of:

- oral health,
- healthy eating and active living,
- immunizations,
- nutrition for adult day care centers and emergency and homeless shelters,
- communicable disease and patient navigators.

The funding for these services relies on available public and private grants, tobacco tax funds authorized under Amendment 35 (2004 ballot issue), and very limited General Fund.

**Department of Corrections -DOC**

The Department of Corrections also has experienced the impact of the aging of those in their custody, due in part to the effect of longer sentences. The prison population aged 50 and over increased 196% from 2000 to 2016, while the total prison population increased 22.6% during that same period. From 8.2% of the total population in 2000, those aged 50 and over represented 19.8% in 2016. Approximately 90% of the total annual DOC budget is from the General Fund ($756.4M GF of a total appropriation of $843.97M in 2016-17).

**Table 13. DOC Prison Population and Population 50 and Older**

| Date | 50+ | Total | % 50+ |
|---|---|---|---|
| 6/30/2000 | 1299 | 15,846 | 8.2% |
| 6/30/2005 | 2065 | 20,445 | 10.1% |
| 6/30/2010 | 3286 | 22,617 | 14.5% |
| 6/30/2015 | 3849 | 19,430 | 19.8% |

Source: Department of Corrections; State Appropriations Act – HB16-1405

The aging of those under the jurisdiction of the DOC could drive increased General Fund costs for medical care, and potentially for assistance with personal care, i.e. bathing, dressing, toileting, ambulation, etc. Except for periods of hospitalization for more than 24 hours, Medicaid does not pay for health care for those who are incarcerated. A recent change to Medicaid policy does allow those in community corrections who meet the eligibility criteria to access Medicaid health care services for in-patient hospitalizations.

**Department of Transportation - CDOT**

CDOT funds the acquisition of vehicles used in enhanced mobility for seniors and individuals with disabilities through a grant process to non-profit community-based providers. Funding sources for the grants include the federal funds, and some from the "FASTER" fund (Funding Advancements for Surface Transportation and Economic Recovery). The services funded through these sources serve both persons with disabilities and older persons. The program does not exclusively target older Coloradans.

**Department of Local Affairs (DOLA) – Division of Housing**

Affordable and accessible housing options, including housing with supportive services, are one of the most critical basic needs for older adults. The Division of Housing in DOLA provides support for both the construction of housing and for rental assistance for low-income individuals of all ages and for persons with disabilities. This program initially was funded primarily by federal funds. However, as noted in the funding authorized by the annual Long Bill there has been an increase in General Fund support for housing over the past 15 years. The tables below represent estimated amounts of federal funds, and the impact of the passage of HB11-1230. That bill consolidated state programs that distribute federal moneys to persons needing assistance in obtaining housing from other departments into the Division of Housing.

**Table 14. Low Income Rental Subsidies**

| SFY | Federal Funds | General Funds |
|---|---|---|
| 2000-01 | 6.5M | 0 |
| 2005-06 | 15.4M | 0 |
| 2007-08 | 17M | 0 |
| 2012-13 | 36.9 | 0 |
| 2015-16 | 49.4M | 1.36M |
| 2016-17 | 45.4M | 2.61M |

*Source: Annual State Appropriations Acts*

**Table 15. Affordable Housing Grants and Loans**

| SFY | Federal Funds | General Funds |
|---|---|---|
| 2000-01 | 10.9M | 2.6M |
| 2005-06 | 9.2 M | 100K |
| 2007-08 | 8.9M | 1.2M |
| 2012-13 | 45M | 2.2M |
| 2015-16 | 7.5M | 8.2M |
| 2016-17 | 12M | 8.2M |

*Source: Annual State Appropriations Acts*

In addition to the consolidation of housing programs through HB11-1230, a footnote in the Long Bills for FYs 15-16 and 16-17 notes a significant example of interdepartmental collaboration between DOLA and HCPF in services to older and disabled individuals. Colorado has had Medicaid "waivers" for about three decades to provide home-based care in lieu of institutional care. One of the benefits under the waivers is authority to spend Medicaid funds for home modifications that allow individuals to live safely at home (e.g. ramps, bathroom modifications). Since the mid-80's, this benefit has been administered by those whose background is health and personal care for those needing long term services and supports. As reflected in the footnote and appropriations, HCPF and DOLA collaborated to transfer the administration of that benefit from HCPF to DOLA to be administered by those with housing expertise. While a relatively small amount of funds are involved, slightly under $220K annually, it represents the kind of inter-agency collaboration that benefits both older adults and taxpayers.

**Other State Programs**

The above programs and services, whether they are provided exclusively or primarily to older Coloradans or are provided to a broader spectrum that includes older persons, are in no way an exhaustive listing of state supported programs that are impacted by the increased aging of our population. It was not possible to quantify the amount of state General Fund in all those programs across state government. They are funded from a variety of sources, including General Fund. A sampling from a review of the 2016-17 Long Bill includes:

- The Adult Education and Literacy Grant Program in the Department of Education
- Library Programs also in DOE, including the Talking Book and Reading Services for the Blind
- Mental Health, Substance Abuse and Suicide Prevention services in the CDHS – with special efforts such as "Senior Reach" seeking to make behavioral health services more accessible and acceptable to older adults
- Supplemental Nutrition Assistance and USDA commodities programs in the CDHS and CDPHE departments that are targeted to low income and older individuals
- Low Income Energy Assistance in the CDHS
- Older Blind Grants in the CDHS
- State Veterans Community Living Centers in the CDHS
- The Home Care Allowance Program in the CDHS
- Legal Services for District Attorneys and courts in the Judicial Branch due to strengthened Elder Abuse criminal statutes
- Programs that target older workers in the Department of Labor and Employment and in CDHS
- Consumer Protection efforts in the Department of Law
- Disabled Parking education and advocacy in the Office of the Governor
- Non-Medicaid Indigent Care and the OAP State Medical Program in HCPF
- Occupational Education and other specially targeted continuing education and training programs in the Department of Higher Education
- The Western Slope Veterans Cemetery in the Department of Military and Veterans Affairs
- Senior Citizen Fishing Licenses and other benefits for older persons in the Department of Natural Resources
- Local Public Health Agencies and Nursing Services through the CDPHE
- The Victim Assistance Program in the Department of Public Safety
- Licensing or certification of thousands of health care professionals and personal care providers through the Division of Professions and Occupations in the Department of Regulatory Agencies (DORA)
- The Senior Health Counseling Program in the Division of Insurance in DORA
- The Disabled Telephone Users Fund in DORA

## Conclusion

Our study task was not to conduct a budget exercise, but instead to analyze the specific impact of aging on state revenues and expenditures. For each of the individual analyses that make up this report we made the specific assumptions that best allowed us to isolate the impact of aging. For the analyses of income and sales tax revenues, in order best to isolate the impact of aging, we held all other economic and demographic factors constant. For the Medicaid analysis, we factored in the impact of health care inflation with specific attention to the fact that health care costs are rising more rapidly for the over 65 cohorts than the general Medicaid population. As a result, we can't present an overall comparison of the effects of aging on the growth rates in revenues and expenditures. However, we can highlight major trends in revenues and expenditures as they relate specifically to the impact of aging. In these analyses we found the following are-related trends:

- Sales Tax – The annual growth rate in real sales tax revenue will decline from a high of just over 1.85% in 2018 to just over 1.55% in 2030.
- Income Tax – The annual growth rate in real income tax revenue will fall from just under 1.65% in 2016 to just under 1.45% in 2030
- Medicaid - Age related expenditures in the Medicaid program will grow from 16.73% today to 21.7% of total expenditures in 2030.
- Senior Property Tax Exemption – Annual growth rates for the exemption will vary from a high of 10.7% in FY 2016-17 to 4.7% by FY 2029-30

**The bottom line** - aging will have a real but modest effect on state revenue growth rates. Because Colorado is projected to be a growing state, total revenue will continue to increase, albeit at a slowing rate. However, at the same time, aging will place increased expenditure pressure on the state budget. The largest growth rates in the 65 and over cohort are projected to occur by the end of the current decade. This will place additional expenditure pressures on the budget immediately. While growth rates in the 65 and over cohort are projected to slow after 2020, many of the expenditure pressures will continue to increase even as the full 65 and over cohort continues to age.