GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

Governor's Budget
Fiscal Years 2018 – 2019

Revenue Estimates
General Fund and Select Funds

Governor's Office of Budget
and Program Planning

Volume 2

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GOVERNOR
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STATE OF MONTANA

ECONOMIC OVERVIEW
SECTION 1

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

Economic Overview

Introduction

Revenue estimates are a core piece of the executive budget, informing both current and future expenditure decisions. Appropriately digesting economic data is important to understanding the intricacies of the various sectors of the economy and how that influences tax revenue for the state of Montana. In addition to knowing the details of individual sectors, it is helpful to have a big picture understanding of the economy as a whole. This section provides an overview of economic conditions in the national economy and then moves into a more detailed discussion of the current outlook for the Montana economy. The economic overview is meant to shed light on the broader economic assumptions that are consistent across all of the revenue estimates. Further detail on sector-specific economic assumptions is available in the descriptions of each individual revenue source.

National Economy

Overview

Modest, steady growth has been the theme of the US economy. Since climbing out of the trough of the Great Recession, growth in real (inflation adjusted) US gross domestic product (GDP) has been moving along at an annual average pace of 2%. Stability in the US economy has persisted despite global economic headwinds, including weak global demand, slowing growth in China, a collapse in commodity prices, and uncertainty in Europe stemming from debt worries and the exit of Britain from the European Union. Domestically, the recent US presidential election added ambiguity to the economic outlook, but it is still too early to tell how the economy may evolve. While US economic growth has not been stellar, it has maintained a level of consistent improvement in many sectors of the economy. The labor market has tightened to a degree that is leading to increased wage growth, meaning the economy is either at, or very near, full employment. Consumer confidence is strong and the housing market continues to improve. Oil prices have risen from early-2016 lows, but still remain subdued, keeping a lid on gasoline prices. The Federal Reserve appears on track for a rate hike in late 2016, and expectations are for further hikes in 2017 as US economic fundamentals, such as employment, wages, and inflation, continue to improve. Steady, if not slightly accelerating, growth is expected for the US economy through 2019.

Table 1 summarizes data for three key national economic indicators for FY 2006 through FY 2016, and shows forecasts from IHS Markit for FY 2017 through FY 2019.

Table 1
Gross Domestic Product, Unemployment, and Inflation

Fiscal	U.S. Gross Domestic Product		Unemployment	Inflation
Year	Billions $	Change	Rate	Rate
2006	$13,509	6.5%	4.8%	2.0%
2007	$14,158	4.8%	4.5%	2.0%
2008	$14,684	3.7%	5.0%	2.1%
2009	$14,529	-1.1%	7.6%	2.1%
2010	$14,630	0.7%	9.8%	2.2%
2011	$15,247	4.2%	9.3%	2.2%
2012	$15,867	4.1%	8.5%	2.3%
2013	$16,386	3.3%	7.8%	2.3%
2014	$17,015	3.8%	6.8%	2.3%
2015	$17,761	4.4%	5.7%	2.4%
2016	$18,274	2.9%	5.0%	2.4%
2017	**$18,977**	**3.8%**	**4.8%**	**2.4%**
2018	**$19,841**	**4.6%**	**4.7%**	**2.5%**
2019	**$20,712**	**4.4%**	**4.6%**	**2.5%**

Employment and Wages

The US economy has added jobs for 73 consecutive months dating back to October, 2010. Over this period the average monthly gain in employment has been 200,000 jobs, with a maximum of 346,000 jobs added in April 2011 and a minimum of 24,000 jobs added in May 2016. Total nonfarm payroll employment in the US is slightly under 145 million with data through October 2016. By this measure of employment, the total number of jobs in the economy is over five million higher than the pre-recession employment peak.[1] The unemployment rate dropped below 5% for the first time since 2008 in January 2016, and has recorded monthly readings of 5% or less throughout 2016. Simply looking at total employment and the unemployment rate masks other characteristics of the labor market that reveal further details about the health of the economy.

There are still labor market participants that are having difficulty finding jobs. This is manifest in various measures of labor underutilization. One such metric, referred to as U-6 unemployment, adds people that are marginally attached to the labor force and individuals working part-time for economic reasons to the number of unemployed to get a broader picture of labor market health.[2] As of October 2016, the percent of the civilian labor force that was either unemployed, marginally attached to the labor force, or working part-time for economic reasons stood at 9.5%. This is an improvement from 9.8% in October 2015; however, the U-6 measure of labor underutilization is still higher than the pre-recession low of 7.9% in late 2006. The number of part-time workers for economic reasons has been trending gradually down since 2009, dropping by close to 40% to its present level of 5.8 million workers. Still, by historical standards, the number of workers stuck in part-time positions remains elevated. Current measures of labor underutilization suggest that slack still exists in the labor market, a notion reinforced by the lack of acceleration in wage growth over the course of the economic recovery.

Annual average wage growth has hovered around 2% for the last six years, but has recently been ticking upward.[3] Wage growth reached an annualized rate 2.8% in October 2016, the highest rate of growth since the trough of the recession. Sluggish wage growth has been one of the hallmarks of the US recovery, facilitating much discussion among experts about why wages are so resistant to rising. A partial explanation is linked to the changing demographics of the workforce. The baby boomer generation is retiring, and these high-wage earners are being replaced in the workforce by relatively low-wage earning millennials. As this shift occurs, it exerts downward pressure on the average wage which reduces the pace of wage growth. Another reason wages have been slow to grow is simply because they did not fall much during the recession, especially when compared to the massive decline in employment.

Wages resisted sharp downward movement during the crisis, and so have been impervious to pronounced upward movement during the recovery. As the recovery strengthened and firms began to hire again, they did not need to increase wages to attract workers. Wage rigidity created a market imbalance where the number of individuals willing to work for the prevailing wage exceeded the number of workers that firms were willing to hire at that wage. Productivity gains and inflation can help alleviate the labor market imbalance caused by sticky nominal wages; however, inflation and productivity have exhibited little growth during the recovery.[4] The severity of the drop in employment, along with persistently low inflation and low productivity growth, has prolonged slack in the labor market for an exceptional period of time. Employment continues its pace of steady gains, and the effects are only recently beginning to become apparent in rising wages and inflation. As the economy draws nearer to full employment, wages and inflation should experience further growth.

Inflation

Inflation as measured by the Consumer Price Index (CPI) for all items rose 1.5% year-over-year in September 2016.[5] This broad measure of the CPI, which includes volatile food and energy prices, took a sharp downward turn in the second half of 2014 as energy prices fell dramatically alongside plummeting oil prices. The transitory effects of the energy price decline started to dissipate in late 2015 and have continued to do so throughout 2016. The CPI for all items is much lower than core inflation metrics that exclude the more volatile price components of the index.

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[1] Data from Bureau of Labor Statistics, seasonally adjusted.
[2] Individuals classified as marginally attached to the labor force are not employed nor are they actively looking for a job, but still would prefer to have a job and have looked for a job in the past 12 months. Workers on part-time schedules for economic reasons are employees that would rather be in a full-time job but cannot find one.
[3] 12-month averages of annualized growth in nominal average hourly earnings from the Bureau of Labor Statistics, seasonally adjusted.
[4] Rising productivity brings the marginal benefit of labor hours (output) more in line with the marginal cost (wage). Inflation lowers real wages, shrinking the gap between what a firm is paying a worker and what the firm wants to pay its worker (it brings real wages closer to productivity).
[5] CPI data are from the Bureau of Labor Statistics.

The core CPI measure that excludes food and energy prices recorded a 2.2% year-over-year gain in September 2016. Core CPI remained below 2% from February 2013 through October 2015, averaging 1.8% over this period. In the eleven months since, core CPI has averaged 2.2%. Inflation near 2% is important because it is the stated inflation target for the Federal Reserve and influences the central bank's policy decisions. The inflation measure the Fed watches closely is the price index for personal consumption expenditures less food and energy (referred to as core PCE). Core PCE inflation has been tracking consistently below core CPI inflation. The most recent reading for year-over-year core PCE inflation measured 1.7% in September 2016. The central bank is carefully watching movements in numerous measures of inflation and using the information to inform policy decisions. Part of the way the Fed attempts to keep inflation stable around 2% is through efforts to manage inflation expectations of consumers and businesses. The Fed uses its policy tools to guide consumers and businesses to a view of inflation that does not skew their spending either toward the present or the future. Currently, the Fed has been conveying, through various statements and speeches by its officials, that inflation expectations are "well anchored" around the 2% mark, and the bank has expressed no material concern about threats of runaway inflation or deflation in the near-term.

US Corporate Sector

Table 2 presents the developments in the United States corporate sector, as represented by corporate profits and the path of the Standard & Poor's 500 stock index (S&P 500), for FY 2006 through FY 2016 and the IHS Markit baseline forecast for FY 2017, FY 2018, and FY 2019. The table shows that as the national economy went through the Great Recession, corporate profits slowed in FY 2007 and then declined sharply in FY 2008 and FY 2009. In FY 2010 profits bounced back strongly, recovering most of the decline of the prior two years. Corporate profits growth decelerated until dropping into negative territory in FY 2016. A large portion of the decline is a consequence of oil price declines and overshooting of oilfield investments.

Table 2
Corporate Profits and
Standard & Poor's 500 Stock Index

Fiscal	Corporate Profits		S&P 500	
Year	Billions $	Change	Index	Change
2006	$1,775	22.6%	1,255	2%
2007	$1,820	2.5%	1,400	.6%
2008	$1,643	-9.7%	1,427	9%
2009	$1,254	-23.6%	966	-32.3%
2010	$1,713	36.6%	1,086	.4%
2011	$1,833	7.0%	1,231	.4%
2012	$1,987	8.4%	1,288	7%
2013	$2,125	6.9%	1,486	.4%
2014	$2,214	4.2%	1,795	.8%
2015	$2,245	1.4%	2,038	.6%
2016	$2,099	-6.5%	2,026	6%
2017	**$2,221**	**5.8%**	**2,179**	**6%**
2018	**$2,310**	**4.0%**	**2,279**	**6%**
2019	**$2,349**	**1.7%**	**2,361**	**6%**

The forecast for corporate profits anticipates that they will recover and grow modestly. The S&P 500 index forecast reflects those trends as well. While the corporate profits forecast in Table 2 are estimates of profits of all firms nationally, Montana participates in this national activity. In fact, the largest 100 Montana corporate income tax filers (of over 16,800 total filers) generally pay almost 70% of Montana's annual corporate tax. These firms apportion their national or worldwide profits to state taxing jurisdictions. Thus, the bulk of corporate income tax revenues are better reflected in the national corporation profits and S&P 500 index trends. Income from "main street" Montana businesses is principally reflected in Montana personal income with taxes on those incomes reported on individual income tax returns, as these firms tend to file partnership and "S" corporation returns.

Montana Economy

Economic Structure

Table 3 shows Montana's gross state product (GSP) divided into twelve sectors. Actual GSP by sector is shown for 2008 and 2012, with forecast numbers for 2016 and 2020. In addition to the dollar value of each GSP sector, the sector's share of total state GSP is also included in the table.

Table 3
Montana Gross State Product by Sector
($ millions)

	CY 2008		CY 2012		**CY 2016**		**CY 2020**	
Economic Sector	$	%	$	%	$	%	$	%
Other Services	$8,350	22.7%	$9,691	23.0%	**$11,373**	**24.5%**	**$13,834**	**25.4%**
Finance, Insurance, & Real Estate	$6,136	16.7%	$7,202	17.1%	**$8,473**	**18.3%**	**$9,856**	**18.1%**
State and Local Gov't, Schools	$3,953	10.7%	$4,431	10.5%	**$4,870**	**10.5%**	**$5,513**	**10.1%**
Transp., Comm., & Util.	$3,586	9.7%	$3,864	9.2%	**$4,225**	**9.1%**	**$4,780**	**8.8%**
Manufacturing	$2,280	6.2%	$2,804	6.7%	**$3,185**	**6.9%**	**$3,856**	**7.1%**
Retail Trade	$2,438	6.6%	$2,640	6.3%	**$3,121**	**6.7%**	**$3,669**	**6.7%**
Construction	$2,343	6.4%	$2,208	5.2%	**$2,923**	**6.3%**	**$3,419**	**6.3%**
Wholesale Trade	$1,998	5.4%	$2,273	5.4%	**$2,681**	**5.8%**	**$3,370**	**6.2%**
Federal Government	$1,348	3.7%	$1,551	3.7%	**$1,735**	**3.7%**	**$1,938**	**3.6%**
Mining	$2,469	6.7%	$3,078	7.3%	**$1,658**	**3.6%**	**$1,637**	**3.0%**
Agriculture, Forestry, & Fishing	$1,457	4.0%	$1,885	4.5%	**$1,624**	**3.5%**	**$1,889**	**3.5%**
Military	$494	1.3%	$513	1.2%	**$523**	**1.1%**	**$647**	**1.2%**
Total	$36,852	100.0%	$42,139	100.0%	**$46,390**	**100.0%**	**$54,407**	**100.0%**

Sectors that have increased as a share of the total economy over time and that are projected to continue doing so include manufacturing, wholesale trade, and other services.[6] By 2020, the mining, military, agriculture/forestry/fishing, government, construction, and transportation/communication/utilities sectors are all projected to a smaller portion of the economy than they were in 2008. The service-providing sectors of the Montana economy are forecast to increase in their share of GSP by 2020. Both the tourism and healthcare industries have exhibited strong growth since 2008, contributing to the rising proportion of GSP stemming from the other services sector. Mining GSP has taken a large hit from the decline in commodity prices; however, an unexpected, rapid rise in energy and metals price could reverse the downward trend in the mining sector. The agriculture industry maintains a steady share of GSP in 2016 and 2020, but rises in overall value during those years. Construction GSP surged from 2012 to 2016 as the industry recovered from the housing market crash. Despite rising in overall value, the construction industry is estimated to represent roughly the same share of total GSP in 2020 as it did in 2008. Manufacturing has been a bright spot in the Montana economy. The industry is projected to represent 7% of GSP in 2020, up from 6.2% in 2008. It is clear from the information in Table 3 that the economic structure of Montana's economy is shifting. The share of GSP from resource extraction industries, government, and agriculture is shrinking, while the contribution from service industries such as healthcare, education, and finance is expanding.

Income Structure

Table 4 breaks out Montana wage and salary income into fifteen sectors.[7] Realized income numbers are shown for 2008 and 2012. IHS Markit forecasts for 2016 and 2020 are presented as well.

[6] The other services sector is comprised of professional/technical services, management services, administration services, waste management services, education services, health care services, accommodation and food services, and entertainment and recreation services.

[7] The growth in total wages and salaries for a sector is due to a combination of growth in employment in the sector and growth of wages. These attributes differ among sectors.

The largest share of total Montana wage and salary income in 2008 came from the state and local government sector. Income from education and health services represented the second largest share of total income in 2008 and is projected to overtake state and local government as the largest share in 2016, with the gap widening further in 2020. Sectors with rising income shares from 2008 to 2020 include: agriculture, forestry and fishing, professional and business services, financial activities, and leisure and hospitality. The income shares from the leisure and hospitality sector and the professional and business services sector are both projected to rise by 13.5% from 2008 to 2020. Most sectors experience declining income shares according to the data in the table. Income from the construction and mining sector fell from 2008 to 2012, and falls further in 2016 before rebounding by 2020 due to growth in the construction industry. Manufacturing income has been fairly consistent around 5% of total income, except for 2012 when its share dipped to 4.5% in the aftermath of the recession. Overall, total wage and salary income in Montana is forecast to increase to $23.9 billion by 2020.

Table 4
Montana Wage and Salary Income by Economic Sector
($ millions)

	CY 2008		CY 2012		**CY 2016**		**CY 2020**	
Economic Sectors	$	%	$	%	$	%	$	%
Educational & Health Services	$2,159	13.9%	$2,604	15.2%	**$3,160**	**15.9%**	**$3,970**	**16.6%**
State & Local Government, Schools	$2,452	15.7%	$2,652	15.5%	**$3,087**	**15.5%**	**$3,510**	**14.7%**
Professional & Business Services	$1,495	9.6%	$1,852	10.8%	**$2,026**	**10.2%**	**$2,607**	**10.9%**
Construction and Mining	$1,734	11.1%	$1,756	10.3%	**$1,932**	**9.7%**	**$2,437**	**10.2%**
Retail Trade	$1,394	8.9%	$1,413	8.3%	**$1,704**	**8.6%**	**$2,051**	**8.6%**
Leisure & Hospitality	$916	5.9%	$1,017	5.9%	**$1,346**	**6.8%**	**$1,609**	**6.7%**
Financial Activities	$952	6.1%	$1,003	5.9%	**$1,221**	**6.1%**	**$1,481**	**6.2%**
Transportation, Warehousing & Utilities	$794	5.1%	$950	5.5%	**$1,032**	**5.2%**	**$1,132**	**4.7%**
Manufacturing	$809	5.2%	$764	4.5%	**$965**	**4.9%**	**$1,137**	**4.8%**
Wholesale Trade	$759	4.9%	$814	4.8%	**$955**	**4.8%**	**$1,115**	**4.7%**
Federal Government	$786	5.0%	$841	4.9%	**$860**	**4.3%**	**$963**	**4.0%**
Other Services	$491	3.1%	$526	3.1%	**$628**	**3.2%**	**$712**	**3.0%**
Agriculture, Forestry & Fishing	$252	1.6%	$333	1.9%	**$379**	**1.9%**	**$456**	**1.9%**
Information	$304	2.0%	$299	1.7%	**$319**	**1.6%**	**$381**	**1.6%**
Military	$287	1.8%	$297	1.7%	**$283**	**1.4%**	**$349**	**1.5%**
Total	$15,584	100%	$17,122	100%	**$19,898**	**100%**	**$23,909**	**100%**

Production and Income

Gross state product (GSP) and personal income in Montana for FY 2006 through FY 2016 are shown in Table 5, along with forecasts for FY 2017 through FY 2019 from IHS Markit. Over the past eleven years Montana experienced only one year of shrinking GSP. This occurred in FY 2009 during the trough of the Great Recession. Two years later, in FY 2011, Montana GSP rose by 7%, followed by another strong year of over 6% growth in FY 2012. Montana GSP growth has decelerated since, averaging 2.5% over the four years from FY 2013 through FY 2016. The drag from the decline in commodity prices contributed to depressed GSP growth in FY 2016. For the upcoming three years Montana GSP growth is forecast to average 3.7%. Growth rises in both FY 2017 and FY 2018, and then retreats slightly in FY 2019.

A good summary indicator of how changes in the economic environment may impact state revenue collections is Montana personal income. The personal income measure is a combination of many income types (wages and salaries, capital gains, transfers, proprietors' income, etc.). Fluctuations in the level and composition of personal income can influence the state revenue picture. Montana experienced rapid growth in personal income from FY 2006 to FY 2008 as the economy ran hot leading up to the recession. Personal income growth fell sharply in FY 2009 and FY 2010, averaging just under 0.5% for those two years. FY 2011 and FY 2012 saw vastly improved income growth. Total personal income eclipsed $40 billion in FY 2013, but grew at half the rate recorded in the prior year. Income growth fell to only 1% in FY 2014. This was due in part to tax planning by individuals in the face of federal tax law uncertainty before the passage of the American

Taxpayer Relief Act of 2012 (ATRA) in January 2013. Healthy income growth was recorded in both FY 2015 and FY 2016, and is projected to remain on a strong pace through FY 2019.

Table 5
Gross State Product and Personal Income
($ millions)

Fiscal Year	Gross State Product	Percent Change	Personal Income	Percent Change
2006	$31,549	8.6%	$29,170	8.1%
2007	$34,207	8.4%	$31,448	7.8%
2008	$36,553	6.9%	$33,894	7.8%
2009	$36,108	-1.2%	$34,147	0.7%
2010	$36,636	1.5%	$34,229	0.2%
2011	$39,203	7.0%	$36,354	6.2%
2012	$41,695	6.4%	$38,883	7.0%
2013	$42,614	2.2%	$40,221	3.4%
2014	$43,910	3.0%	$40,641	1.0%
2015	$45,343	3.3%	$42,439	4.4%
2016	$46,104	1.7%	$43,692	3.0%
2017	**$47,320**	**2.6%**	**$45,117**	**3.3%**
2018	**$49,509**	**4.6%**	**$47,243**	**4.7%**
2019	**$51,480**	**4.0%**	**$49,681**	**5.2%**

Employment and Population

Table 6 outlines total Montana nonfarm employment, working age population, and total population for FY 2006 through FY 2016 along with estimates for FY 2017 through FY 2019 from IHS Markit. Employment growth in Montana started to flatten in FY 2008 before turning negative in FY 2009 as the recession took hold of the economy. The Montana economy continued to shed jobs in FY 2010 and FY 2011 in the aftermath of the downturn. Job losses in Montana were mitigated to a degree by the Bakken oil boom which drew many workers to the far eastern part of the state. Since FY 2012, employment has grown steadily and faster than the working-age population, drawing down unemployment. Montana firms are having difficulty finding skilled workers to fill available positions. Additionally, commodity prices have been low for the better part of two years, driving job losses in Montana's natural resource sector. Strong growth in the construction and tourism industries in the state has helped offset the employment declines in the mining and related industries. Total Montana nonfarm employment rose above 500,000 for the first time in FY 2016. The Montana economy is forecast to add slightly over 1,000 jobs in FY 2017. Employment growth increases in FY 2018 and then flattens slightly in FY 2019.

Employment growth differs across regions in the state. Montana is a large state and the many sectors that make up the economy have responded differently in the wake of the Great Recession. The eastern portion of the state has benefited from oil and gas development of the Bakken shale formation. In addition to drilling activity, numerous oilfield service companies cropped up to meet the needs of the oil and gas industry. The surge in economic activity in the Bakken oilfield has boosted employment in many of Montana's easternmost counties. Employment in the northwest region of Montana has been the slowest to recover from the recession. Economic activity in this region was concentrated in wood product manufacturing and construction, two industries that were hit hard during the downturn. Southwest Montana suffered from the collapse in the construction industry as well, but employment in this region has fared better during the recovery than employment in northwest Montana. Overall, employment growth in Montana has outpaced the national average.

Table 6 Montana Employment, Working Age and Total Population						
Fiscal Year	Employment	Percent Change	Working (16-65) Age Population	Percent Change	Total Population	Percent Change
2006	471,263	2.2%	637,238	1.3%	947,958	1.2%
2007	480,863	2.0%	645,282	1.3%	960,189	1.3%
2008	485,409	0.9%	651,595	1.0%	972,013	1.2%
2009	474,598	-2.2%	655,140	0.5%	981,140	0.9%
2010	463,742	-2.3%	657,976	0.4%	988,336	0.7%
2011	463,499	-0.1%	660,893	0.4%	994,948	0.7%
2012	470,653	1.5%	662,072	0.2%	1,002,529	0.8%
2013	481,059	2.2%	663,378	0.2%	1,011,531	0.9%
2014	488,612	1.6%	664,963	0.2%	1,021,081	0.9%
2015	496,651	1.6%	665,524	0.1%	1,030,238	0.9%
2016	502,064	1.1%	665,631	0.0%	1,039,192	0.9%
2017	**503,092**	**0.2%**	**665,802**	**0.0%**	**1,048,176**	**0.9%**
2018	**510,192**	**1.4%**	**666,139**	**0.1%**	**1,057,076**	**0.8%**
2019	**516,165**	**1.2%**	**666,424**	**0.0%**	**1,065,555**	**0.8%**

From FY 2006 to FY 2008, the total population in Montana grew at an average pace of about 1.3% per year. The population growth rate dipped below 1% in FY 2009, and hasremained under 1% through FY 2016. Montana's population surpassed one million individuals in FY 2012. Over the next three years, annual population growth is expected to remain consistent in the 0.8% to 0.9% range.

The story is different when focusing on the working age population in Montana. Working age population growth has slowed significantly over the past decade. In fact, the working-age population did not grow at all in FY 2016. The large "baby boomer" cohort of individuals is aging out of the working-age population. As these individuals exit the workforce, there are fewer individuals reaching working age to mitigate the declining growth of this large chunk of the population. The working age population is forecast to stay essentially flat through FY 2019.

Age Structure of the Population

Table 7 shows the 1990, 2000, and 2010 census counts for Montana's population, along with the forecast from IHS Markit for 2019. The population numbers are broken down into ten-year age groups, showing the number of individuals in each age group as well as each group's share of the total population.

Table 7 Age Structure of Montana Population								
	CY 1990		CY 2000		CY 2010		**CY 2019 Forecast**	
Age	Persons	%	Persons	%	Persons	%	**Persons**	**%**
0-9	125,245	15.6%	115,323	12.7%	123,281	12.4%	**133,119**	**12.4%**
10-19	120,888	15.0%	141,154	15.6%	127,663	12.8%	**128,102**	**11.9%**
20-29	104,444	13.0%	109,074	12.0%	132,487	13.3%	**140,458**	**13.1%**
30-39	134,417	16.7%	117,041	12.9%	115,039	11.6%	**129,635**	**12.1%**
40-49	105,560	13.1%	149,776	16.5%	125,977	12.7%	**122,533**	**11.4%**
50-59	72,808	9.0%	112,531	12.4%	154,751	15.6%	**138,878**	**12.9%**
60-69	67,083	8.3%	71,173	7.9%	113,170	11.4%	**136,174**	**12.7%**
70-79	49,987	6.2%	54,883	6.1%	61,082	6.1%	**91,307**	**8.5%**
80+	24,510	3.0%	34,416	3.8%	40,747	4.1%	**52,601**	**4.9%**
Total	804,942	100.0%	905,371	100.0%	994,197	100.0%	**1,072,807**	**0.0%**

The cohort over the age of 60 is growing as a share of the total population. At the 2000 census, individuals over 60 years of age represented 17.5% of the population in Montana. By 2010, this number had grown to 21.6%. The aging population in Montana is a reflection of a national trend and is expected to continue. In 2019, the number of individuals 60 years or older is predicted to make up nearly 26% of Montana's total population.

Risks and Opportunities for Montana Revenue Collections

The 2019 biennium revenue forecast is based on assumptions about prevailing economic conditions in the upcoming years. It is important to understand that these are assumptions about the future and so may or may not hold true as time progresses. The accuracy of revenue estimates is determined, in part, by how well the economic assumptions underlying the estimates hold up during the course of the forecast period. Outlined in this section is a brief discussion of select revenue sources and their primary components. If the assumptions associated with these revenue sources deviate markedly from expectations, the revenue outcome may be different than forecast.

Personal Income Tax

In the income tax model, the principle source of tax revenue is derived from the level of wage and salary receipts of Montanans. Additionally, forecasting companies rely heavily on the employment, wage, and salary information reported through the Current Employment Statistics (CES) payroll survey of establishments to drive their state models. The forecasting firms do so because the reporting establishments are classified by their sector of economic activity. This information permits them to develop economic sector estimates driven by sector labor market activity. Since the current data are derived from survey samples, data discrepancies for all the labor market indicators are reconciled against the Quarterly Census of Employment and Wages (QCEW), as well as during annual labor statistics benchmarking that takes place every February. The QCEW reconciliation is done with a six- to nine-month lag. These revisions can sometimes lead to significant changes in the outlook. While labor income is the single most important component of income (about 63% of taxable income), the most volatile sources of taxable income are derived from physical and financial capital. Business income, dividends, rents, royalties and the like make up about 15% of taxable income. These are expected to rise back up to trend and continue growing. A rapidly growing source of taxable income is retirement income. This source has been growing steadily as baby boomers retire. The single most volatile source of income is capital gains income, which represents about seven percent of taxable income, but can vary greatly from year-to-year and tends to track the S&P 500. The current expectation is that this source will grow modestly over the forecast period.

The combined effects result in revenues which gradually rise from the relatively flat growth of FY 2016 toward normal positive business cycle growth rates by FY 2019. Income tax growth is expected to begin to recover modestly as employment growth moderates due to demographic forces, but wages accelerate. It is anticipated that the absorption of workers from the slowing oil economy in the eastern part of the state into the broad-based recovery continues. Retirements continue to grow and capital gains moderate. The estimate relies on the IHS MarkitOctober baseline forecast for much of the data used in the model. The November IHS Market forecast was evaluated and the results were virtually identical to the October forecast result.

The base assumptions in the forecast are that federal policy will not subtract from growth. Modest improvement in factors like consumer demand, employment, and wage growth is expected. Importantly for Montana, oil price headwinds subside. Monetary policy is expected to begin to move to a more normal stance and away from extraordinary measures that have characterized the last nine years. These improvements do not imply a boom, but simply that Montana, generally, will see better economic conditions than those that have prevailed over the last couple of years.

Corporation Income Tax

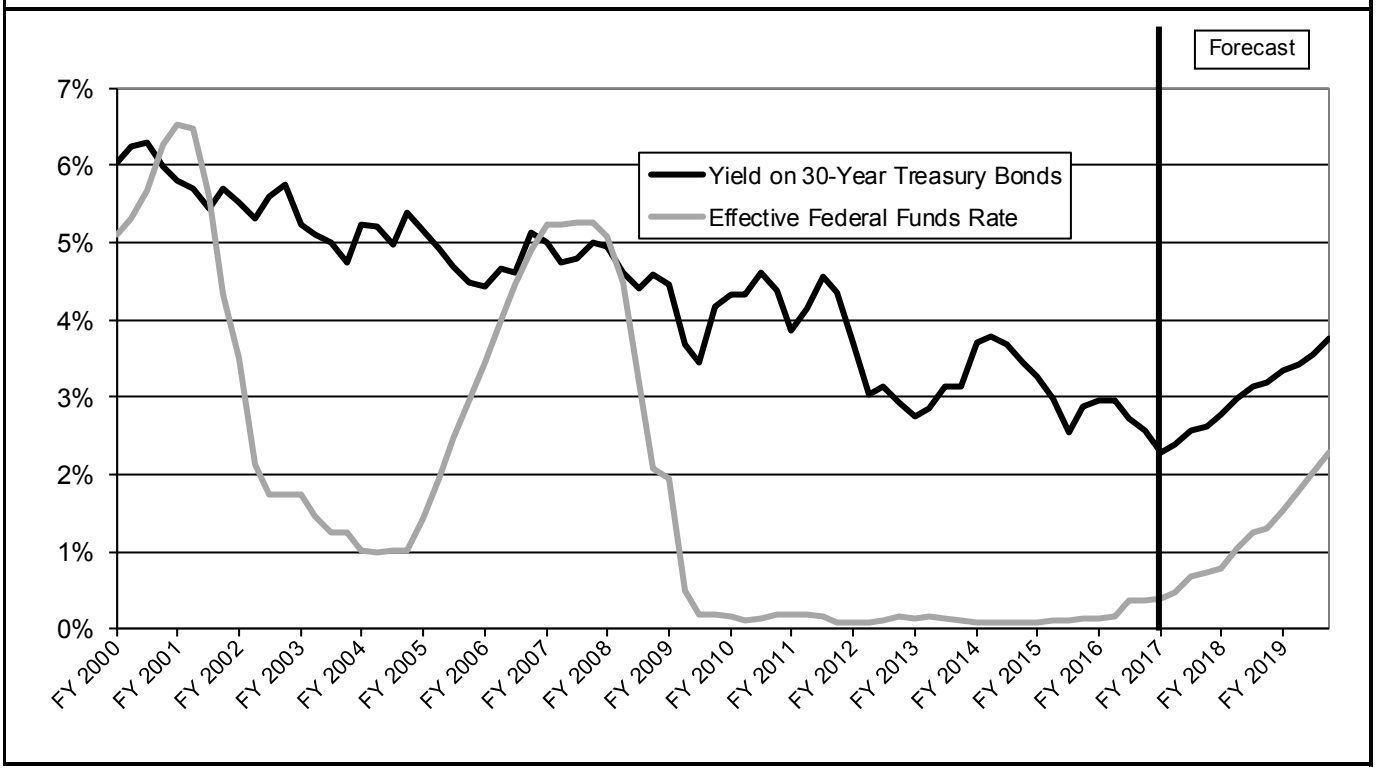
Despite negative corporate profit growth in FY 2016, corporate profits are expected to rise slowly in FY 2017 and accelerate in the years following. FY 2016 reductions in corporate profits and the extension of bonus deprecation rules will mute the tax revenue recovery. When making the corporation income tax estimate, OBPP used the IHS Markit November 2016 baseline outlook for US Corporate before-tax profits as the chief input in the forecast. The model compares current year collections to the prior two fiscal years of profits, the applicable fiscal year bonus depreciation rate, and the current fiscal year price of oil. The two-year lag on profits accounts for the timing of final tax payments, and the ability of firms to claw back taxes paid from the prior three years with present losses. The bonus depreciation indicator is used to account for tax policy changes. The fiscal year oil price is used to account for current estimated payment behavior. A significant portion of collections shifts in FY 2013 and FY 2014, and again in FY 2015 and FY 2016, appear to be

attributable to the 23rd hour extension, expansion and retroactive applicability of business bonus depreciation, and expensing provisions of federal tax law. Under the most recent tax policy changes in *The Protecting Americans from Tax Hikes Act of 2015* (PATH), bonus depreciation has been extended through CY 2019 (CY 2020 for certain long-production period property). Prior to PATH, these tax advantages were set to expire in CY 2014.

Interest Earnings

The State of Montana earns interest on its numerous trust funds and on short-term cash holdings in the general fund and other state funds. Two primary contributors of interest income to the state general fund are the coal severance tax permanent trust fund and the treasury cash account. The coal permanent fund is invested primarily in long-term assets, while the treasury cash account consists mostly of short-term holdings. This makes general fund revenue collections susceptible to changes in both long-term and short-term interest rates, a fact that has been manifest in the aftermath of the financial crises. Graph 1 shows the path of benchmark short-term and long-term interest rates since FY 2000, along with IHS Markit forecasts for FY 2017 through FY 2019. Annualized rates of return for the federal funds rate and the 30-year US treasury security represent benchmark short-term and long-term interest rates, respectively.

Graph 1
Interest Rates



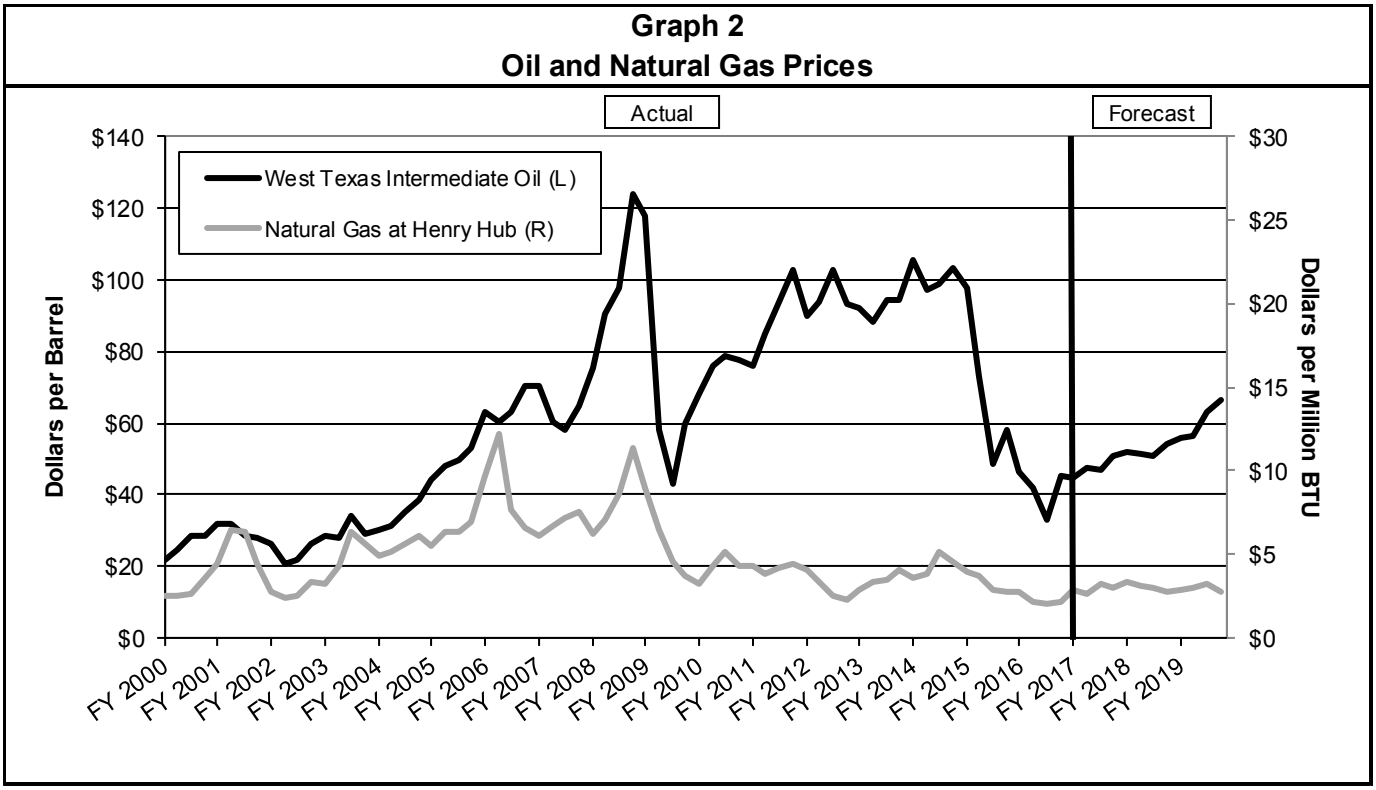
Long-term interest rates have been trending steadily downward since FY 2000. Short-term interest rates have followed the same general path, but have experienced more pronounced spikes and dips along the way, a product of the fluid nature of short-term rates. The Great Recession drove short-term interest rates to essentially zero, where they remained until the Federal Reserve instituted its first rate hike since the crises in December 2015. The extended period of near-zero short-term rates and the continued decline of long-term rates has significantly impacted interest income for the State of Montana.

Interest income from the treasury cash account fell from over $30 million in FY 2008 to under $3 million in FY 2010 as short-term interest rates cratered during those two years. Earnings from this account improved only slightly in FY 2016 to about $4 million as a result of the tiny uptick in rates. The outlook for short-term investment earnings is positive, as forecasts from IHS Markit indicate steadily rising rates through FY 2019. Continued improvement in the health of the national economy will warrant further action by the Fed in effort to prevent the economy from overheating. As benchmark short-term interest rates rise, yields on short-term investments held by the State of Montana will follow suit. General fund revenue from treasury cash account interest earnings is projected to rise in each year from FY 2017 through FY 2019.

Coal permanent fund interest earnings are not as volatile as treasury cash account earnings because of the trust fund's limited exposure to short-term interest rates. Turnover in the asset pool of the coal permanent fund occurs over a long period of time. In the years following the recession, new assets added to the coal permanent fund have been relatively lower-yielding than the maturing assets being replaced. This has been dragging down the overall yield of the trust fund's investments. Interest earnings from the coal permanent fund have fallen every year since FY 2007. According to IHS Markit, long-term interest rates are forecast to reverse their downward trend starting in FY 2017 and continue on this path through FY 2019. This does little to help coal permanent fund interest earnings in the near term. Low-yield assets will continue to dominate the asset pool of the coal permanent fund in the years to come.

Oil and Natural Gas

Montana collects tax revenue from the production of oil and natural gas in the state. The tax is assessed on the gross value of production, which is determined by multiplying production by price. As prices and production fluctuate, so does tax revenue. Price is correlated to a higher degree with tax collections than production. The price of oil is a particularly important factor in determining total revenue from the oil and natural gas production tax. Both oil and natural gas prices are highly volatile, a characteristic that can have a large impact on state tax collections. The prices received for oil and natural gas production in Montana generally track with national benchmark prices. Graph 2 shows national benchmark West Texas Intermediate (WTI) oil and Henry Hub natural gas prices. Historic prices are from FY 2000 through FY 2016, and IHS Markit forecasts are for FY 2017 through FY 2019.



Oil and natural gas prices experienced a period of relative stability from FY 2012 through FY 2014. This period of consistently high prices contributed to multiple years of strong production tax revenue for Montana. At the start of FY 2015, oil and natural gas prices began to drop, continuing to do so into the winter of FY 2016. Consequently, the value of oil and natural gas production in Montana declined substantially, significantly lowering tax collections. General fund revenue from oil and natural gas fell over 60% from FY 2014 to FY 2016. Prices are currently too low to support any drilling activity, causing both oil and natural gas output to track downward, further reducing the value of production.

A global oil glut caused by strong production and weak demand has prevented oil prices from gaining back much of the ground lost during the precipitous decline. Oil prices are forecast to rise through FY 2019, however, as the oil market returns to balance. The Organization of Petroleum Exporting Countries (OPEC) is on the verge of an output deal that

would lower the group's total production and provide some lift to oil prices. Natural gas prices are forecast to rise slightly and then remain steady. High levels of domestic natural gas production in the US reduced prices and created record storage stocks, likely contributing the stability of prices over the forecast period.

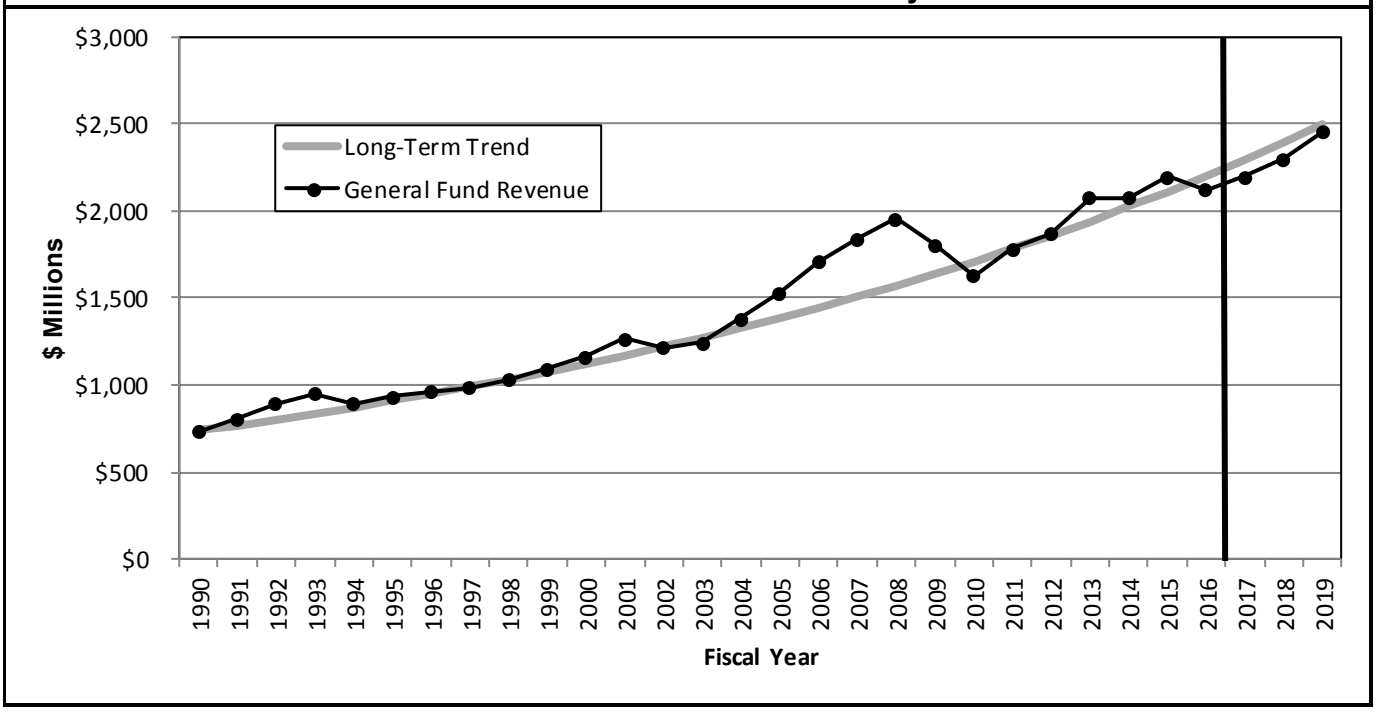
Insurance Premium Tax

In FY 2014, Montana experienced two significant changes that would impact insurance premium taxes. The first occurred in August 2013, when Blue Cross Blue Shield of Montana was purchased by Health Care Services Corporation (HCSC). As a result of the merger, premiums paid to BCBS became taxable. The second change began in January 2014, when the individual mandate of the Affordable Care Act (ACA) went into effect. These changes increased both the number of individuals purchasing insurance and added another corporate payer into the premium tax pool. In addition, BCBS premiums for plan year 2017 have increased by over 50%. Of the 58,000 individuals who signed up for an ACA plan on the healthcare exchange, 83% were eligible for a premium tax credit. While it is not yet known, it is expected that a similar proportion of individuals will qualify for the same tax credit for plan year 2017.

Trend in General Fund Revenue

Over the years, general fund revenue has followed an upward trend, averaging 4.3% annual growth from FY 1990 through FY 2016. Graph 3 displays actual general fund revenue from FY 1990 through FY 2016 and OBPP forecast revenue for FY 2017 through FY 2019, along with the long-term trend of historical collections. Revenue growth from year-to-year is often greater or less than the trend growth rate, but these deviations from trend tend to be self-correcting. Revenue collections revert back to near trend following periods of above average or below average growth. For example, from FY 1991 to FY 1993, general fund revenue grew at an average rate of 9.3%, five percentage points higher than the trend growth rate of 4.3%. Revenue growth over this period turned out to be unsustainable, and was followed by a 6.4% drop in general fund collections in FY 1994. A similar scenario played out in FY 2001 and FY 2002, when relatively high revenue growth in FY 2001 was followed by a decline in revenue in FY 2002. An extended period of higher than average growth from FY 2004 to FY 2008 resulted in a large gap between actual general fund revenue and the long-term trend. This revenue bubble was largely the result of an overheating economy. General fund revenue fell sharply in FY 2009 and FY 2010 in response to a significant nationwide economic slowdown. In two years, revenue collections went from being $382 million above trend in FY 2008, to $82 million below trend in FY 2010. For the 2019 biennium, general fund revenue is projected to be below trend, but inches closer in FY 2018 and FY 2019 due to above average growth in those years.

Graph 3
General Fund Revenue Trend Analysis



Sensitivity of Revenue Estimates to Economic Changes

OBPP monitors economic reports, changes in IHS Markit forecasts, state revenue collections and other economic events closely on an ongoing basis. As a general rule, monthly changes to the IHS Markit forecasts tend to have minor impact on the revenue estimates (generally less than +/- $5 million per fiscal year). These shifts tend to have less impact in the near-term (six months) and greater impact in the long-term. Major quarterly updates that use updated US Bureau of Economic Analysis national income and product accounts data can have a larger impact (a general fund effect of roughly +/- $15 million per year). Below please find a listing of economic or data releases and their potential interaction with revenue estimate timing and the legislative calendar.

Major Montana - IHS Markit, Bureau of Economic Analysis, Bureau of Labor Statistics, & Federal Reserve Data Releases with their Potential Interaction with the Level of the Revenue Estimate and the Legislative Schedule

IHS National Data Release *(2017 approximate)*		**Major New Data** (MT, BEA, BLS, Federal Reserve)	**IHS State Data Release**	**Potential Impact on Revenue Estimate**	**Date of Legislative Significance**	**Date of Possible Full OBPP Revenue Estimate Update.** (Assumes five work days)
October	7-Oct-16	15 Sep - **DOR Property Tax Database** 28 Sep - **State Annual Personal Income**, 2015. (Revisions 1998-2014) 30 Sep - **State Quarterly Personal Income**, Q2 2016 , (Rev,Q1 1998 - Q1 2016) Oct 28 - **US GDP** Q3, 2016 (adv., Est) 31 Oct - DOR **TY 2015 Individual Income T**ax Filings	14-Oct-16	**Most Significant**		Monday, November 07, 2016
November	7-Nov-16	31 Oct -**US Personal Income** and Outlays Sep 2016 1 Nov - **SABHRS** October Collections and FY 2016 Accrual Reversals 9 Nov - DOR **Property Tax Database** (update)	10-Nov-16	**Major**	Revenue and Transportation Interim Committee Thursday, November 17, 2016	Thursday, November 17, 2016
December	6-Dec-16	17 Nov - **Local Area Personal Income**,2015 18 Nov - State Employment and Unemployment (October 2016) 26 Nov - **US Personal Income** & Outlays Oct 2016 29 Nov - **US GDP Q3 2016** (2nd est.); Corp. Profits Q3 2016 (preliminary)	13-Dec-16	Minor	Monday, December 15, 2016 Budget Adjustments	Tuesday, December 20, 2016
January	30-Dec-16	13-14 Dec - **Federal Reserve** Meeting and Projections 7 Dec - **State GDP, Q2 2016** 7 Dec - County Employment and Wages **QCEW** Q2 2016 16 Dec - **State Unemployment** (November 2016) 20 Dec - **State** Quarterly **Personal Income** Q3: 2016 22 Dec - **US GDP Q3 2015** (third est.) **Corp Profits** (revised); 2 Jan - **SABHRS** December Collections (including CY 2016 Withholding)	6-Jan-17	Minor	Jan 2 (Day 1) Jan 23 (Day 17) Last day for new Revenue Bills	Wednesday, January 11, 2017
February	7-Feb-17	mid-Jan - DOR TY 16 **Protested Property taxes** 27 Jan - **US GDP - 4th quarter and Annual 2016** (advance estimate) 31 Jan - Feb 1 **Federal Reserve** Meeting 1 Feb - **SABHRS January Collections** (including January Annual W/H update) 30 Feb - **US Personal Income**, December 2016	14-Feb-17	**Major**	Feb 24 (Day 45) Transmittal of General Bills	Tuesday, February 21, 2017
March	8-Mar-17	Feb 28 - **US GDP**, Q4 2016, & Annual 2016 (second estimate) 2 Mar - **SABHRS** February Collections; 9 Mar County Employment and Wages **QCEW** Q3 2016 2 Mar - **CBO Projections**\ 14-15 Mar - **Federal Reserve** & Projections	15-Mar-17	Minor	March 19 (Day 60) Transmittal HJR 2; March 27 (Date 67) Transmittal of Revenue and Appropriation Bills	Wednesday, March 22, 2017
April	7-Apr-17	3 Apr - **SABHRS** February Collections 17 Mar - **CY 2016 State Employment Benchmark** 17 Mar - January & February **Montana Employment** & Unemployment 28 Mar - **State Annual & Quarterly Personal Income,** Q4 2016; 30 Mar -**US GDP Q4 & Annual 2016** (3rd Est.); **Corporate Profits,** Q4 and 2016). 3 Apr - **SABHRS** March Collections.	14-Apr-17	**Major**	April 18 (Day 80), Transmittal of amended Revenue Bills (including HJR2) Monday April 25 90th Legislative Day ***Sine die***	(Monday, April 10 last da for Revenue bill hearing)
May	9-May-17	1 May - **SABHRS April collections** including payments w/returns, & refunds 23 Apr - **GDP by Industry, 2016**; **GDP Q1 2017** (advance estimate)	16-May-17			

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

GENERAL FUND REVENUE SUMMARY SECTION 2

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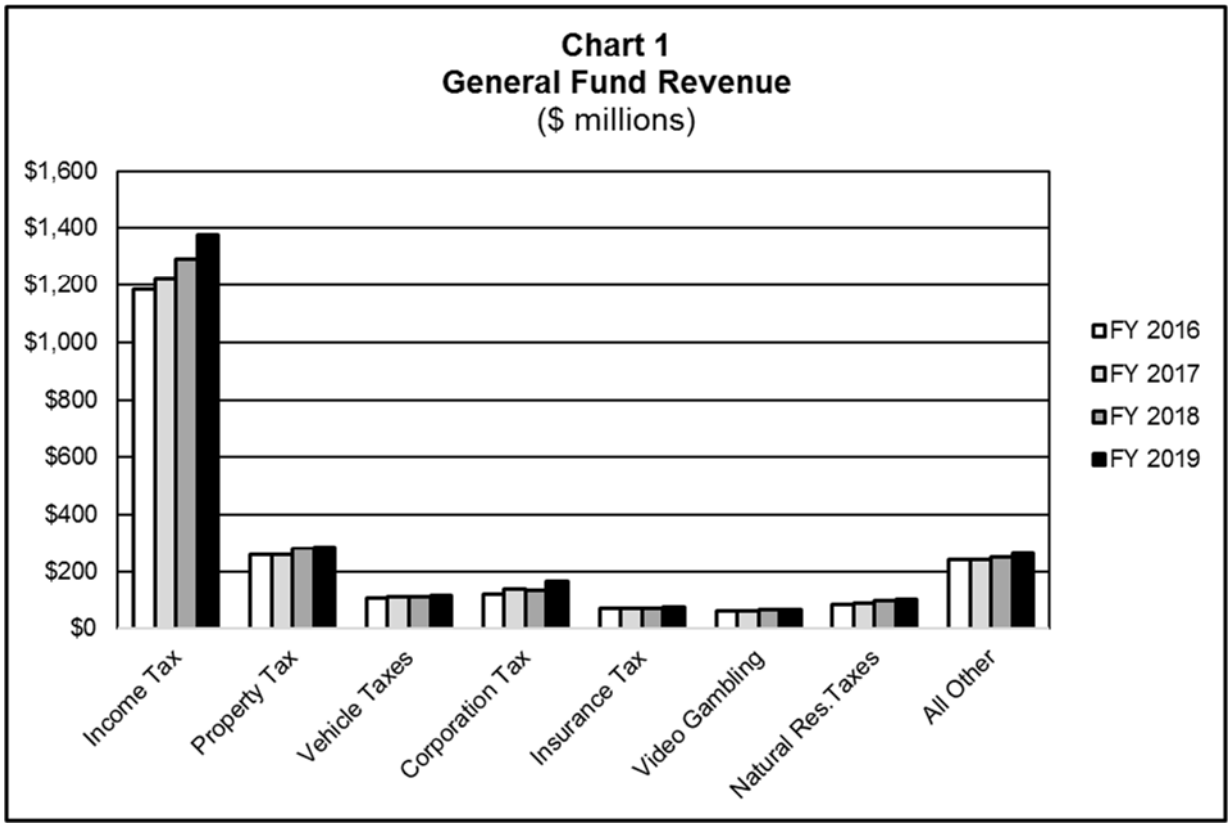
GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

Table 1
General Fund Revenue
(Millions $)

Revenue Category	Actual FY 2016	19 Biennium Forecast FY 2017	FY 2018	FY 2019	Biennial Share
Major Taxes					
Individual Income Tax	1,184.828	1,219.776	1,291.208	1,378.482	56.2%
Property Tax	257.100	260.150	279.620	286.088	11.9%
Vehicle Taxes and Fees	108.479	109.200	112.700	117.500	4.8%
Corporation Income Tax	118.387	140.308	134.346	164.575	6.3%
Insurance Premiums Tax	69.255	71.102	72.951	74.800	3.1%
Video Gambling Tax	60.554	62.522	64.546	65.801	2.7%
Total Major Taxes	**1,798.602**	**1,863.059**	**1,955.370**	**2,087.247**	**85.0%**
Natural Resource Taxes					
Oil and Gas Production Taxes	39.083	44.821	49.533	54.875	2.2%
US Mineral Royalties	16.759	19.610	20.391	20.924	0.9%
Coal Severance Tax	14.236	13.225	15.650	15.724	0.7%
Metalliferous Mines Tax	4.221	4.129	4.160	4.314	0.2%
Electrical Energy Tax	4.536	4.595	4.709	4.634	0.2%
Wholesale Energy Transactions Tax	3.516	3.502	3.406	3.366	0.1%
Total Natural Resource Taxes	**82.352**	**89.882**	**97.848**	**103.838**	**4.2%**
Interest Earnings					
Coal Trust Interest Earnings	20.722	19.893	20.451	20.955	0.9%
Treasury Cash Account Interest	3.961	5.802	10.487	18.286	0.6%
Total Interest Earnings	**24.683**	**25.695**	**30.938**	**39.241**	**1.5%**
Liquor Taxes					
Liquor Excise and License Taxes	19.776	20.596	21.677	22.683	0.9%
Liquor Profits	11.000	11.777	12.435	13.085	0.5%
Beer Tax	3.027	3.029	3.030	3.028	0.1%
Wine Tax	2.373	2.412	2.479	2.547	0.1%
Total Liquor Taxes	**36.176**	**37.813**	**39.621**	**41.342**	**1.7%**
Tobacco Taxes					
Cigarette Tax	31.103	30.980	30.768	30.534	1.3%
Tobacco Products Tax	6.184	6.329	6.461	6.593	0.3%
Tobacco Settlement	3.371	3.371	2.561	2.500	0.1%
Total Tobacco Taxes	**40.658**	**40.681**	**39.790**	**39.626**	**1.7%**
Sales Taxes					
Telecommunications Excise Tax	16.775	16.165	15.576	15.009	0.6%
Institutional Reimbursements	16.910	14.083	11.915	12.017	0.5%
Health Care Facility Utilization Fees	4.764	4.526	4.276	4.244	0.2%
Accommodations Tax	21.493	22.978	25.249	27.659	1.1%
Rental Car Sales Tax	3.878	3.282	3.379	3.473	0.1%
Total Sales Taxes	**63.820**	**61.034**	**60.395**	**62.403**	**2.6%**
Other Taxes and Revenues					
Lottery Profits	11.963	11.549	11.728	12.188	0.5%
Highway Patrol Fines	4.040	4.187	4.244	4.293	0.2%
Investment Licenses and Permits	7.212	7.433	7.750	8.007	0.3%
Contractors' Gross Receipts Tax	2.397	2.510	2.580	2.664	0.1%
Driver's License Fee	4.345	4.539	4.370	4.598	0.2%
Rail Car Tax	3.594	3.437	3.457	3.487	0.1%
Other Revenue	41.444	42.518	43.292	43.679	1.8%
Total Other Taxes	**74.996**	**76.173**	**77.421**	**78.915**	**3.3%**
TOTAL GENERAL FUND REVENUE	**$2,121.287**	**$2,194.337**	**$2,301.383**	**$2,452.611**	**100.0%**

The state general fund accounts for all the state's financial resources, except for those legally mandated to be accounted for in another fund. Chart 1 divides general fund revenue into eight groups. The six largest taxes and the group of natural resources taxes accounted for 89% of general fund revenue in FY 2016, with each group contributing over $50 million.



Individual income tax is the largest revenue source, followed by property tax, and corporate income tax. Revenue from individual income tax is forecast to be $2,670 million for the 2019 biennium, accounting for 56% of total general fund revenue. Property tax revenue is forecast to be $566 million, representing 12% of general fund biennial revenue. Corporate license tax revenue is forecast to be $299 million for the biennium, making up slightly over 6% of general fund revenue. Vehicle revenue includes registration fees and other fees in lieu of taxes, and is estimated to bring in $230 million over the biennium, just shy of 5 % of total general fund collections. Video gambling tax revenue is projected to make up a little under 3% of general fund biennial revenue, bringing in $130 over the two years. Insurance premiums tax is estimated to be the source of $148 million in general fund revenue for the biennium, which represents 3% of total collections for the period.

Table 1 on the previous page shows the 33 general fund revenue categories. The six major taxes, which each bring in more than $50 million per year, are estimated to be the source of 85% of general fund revenue for the 2019 biennium. The natural resource category is comprised of oil and natural gas severance taxes, US mineral royalties, coal severance tax, metalliferous mines license tax, electrical energy producer's license tax, and wholesale energy transaction tax. As a whole, the natural resource tax group is expected to generate $202 million in revenue, accounting for just over 4% of total general fund collections for the biennium. General fund revenue from alcohol and tobacco taxes is projected to be $160 million for the biennium, which is about 3.5% of total revenue. The sales tax group is forecast to generate $123 million in general fund revenue, representing 2.5% of total collections over the biennium. Interest earnings revenue is expected to contribute $70 million to the general fund, and revenue from all other sources is expected to add $156 million in general fund collections, 1.5% and 3% of biennial revenue, respectively.

GOVERNOR
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STATE OF MONTANA

MAJOR REVENUE
SECTION 3

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GOVERNOR'S OFFICE OF
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Revenue Description

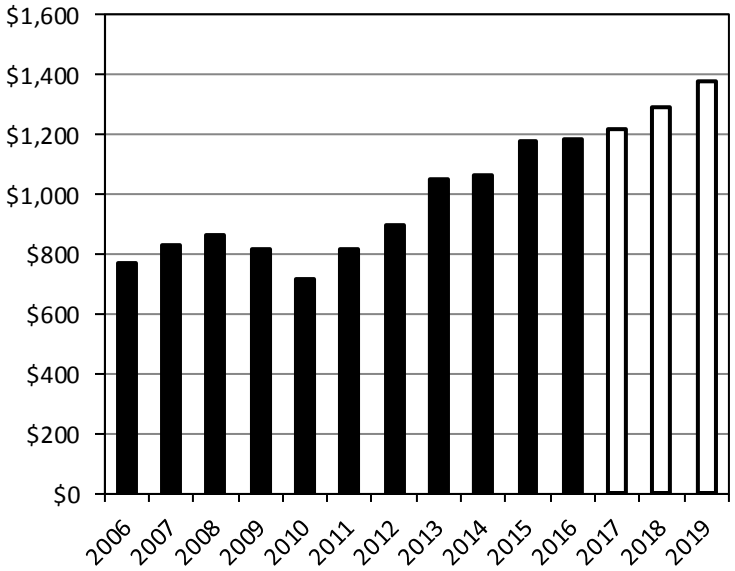
Title 15, Chapter 30, MCA, sets a graduated individual income tax ranging from 1% to 6.9% on gross income, less exemptions and deductions. A taxpayers' Montana adjusted gross income is based on their federal adjusted gross income, but may be higher or lower as some types of income are taxed differently by the state. Itemized deductions for federal and state income tax are similar; however, while all state income tax may be deducted in calculating federal taxable income, the amount of federal income tax that may be deducted in calculating state taxable income is limited. Montana also allows a number of credits that may reduce taxpayers' liabilities.

Individual income tax is the largest source of revenue to the general fund, accounting for 55.9% of total general fund revenue in FY 2016. All individual income tax revenue is allocated to the general fund.

Table 1 shows actual individual income tax revenue for FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019. The large variations in FY 2013 and FY 2014 demonstrate the revenue shifting induced by *The American Taxpayer Relief Act of 2012* (ATRA). To a lesser extent something similar may have happened in FY 2015 and FY 2016 due to the passage of the *Protecting Americans from Tax Hikes (PATH) Act of 2015*. As PATH reinstated tax provisions that had expired at the end of TY 2014 made permanent, and indexed to inflation, many formerly temporary provisions of tax law (deductibility of charitable distributions from IRAs, state and local sales tax deductions, certain education tax credits, and Section 179 business expensing) that were routinely extended.

Table 1
Individual Income Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$768.912	8.88%
A	2007	$827.095	7.57%
A	2008	$866.638	4.78%
A	2009	$815.138	-5.94%
A	2010	$717.834	-11.94%
A	2011	$816.090	13.69%
A	2012	$898.851	10.14%
A	2013	$1,047.790	16.57%
A	2014	$1,063.284	1.48%
A	2015	$1,175.745	10.58%
A	2016	$1,184.828	0.77%
F	**2017**	**$1,219.776**	**2.95%**
F	**2018**	**$1,291.208**	**5.86%**
F	**2019**	**$1,378.482**	**6.76%**



In FY 2017, revenues are expected to gradually rise from the relatively flat growth of FY 2016 and rise slowly toward normal positive business cycle growth rates by FY 2019. Income tax growth is expected to begin to recover modestly as employment growth moderates due to demographic forces but wages accelerate. It is anticipated that the absorption of workers from the oil boom economy in the east by the broad-base recovery in consumer activity statewide keeps taking hold. A good example of this consumer-lead growth is the surge in tourism Montana has seen in recent years. The whole economy is expected to adjust to more normal monetary policy with steady but more muted labor force growth as the economy approaches full-employment. Ultimately, this growth reflects a continuation of the slow healing from "the Great Recession".

Risks and Significant Factors

- This estimate relies on the IHS Markit baseline forecasts for much of the data used in the model. The base assumptions in the forecast are that federal policy will not generate headwinds. There is modest improvement in factors like consumer demand, employment, accelerating wages, and importantly for Montana, that the oil price headwind has dropped and the oil sector again begins to add to growth. Federal monetary policy is expected to begin to move to a more normal stance and away from extraordinary measures that have characterized the last nine years. This does not imply a boom, but simply that Montana generally will see better total economic conditions than we have seen over the last couple of years, despite significant declines (from very healthy prices) for agricultural and mining sector products.
- IHS Markit relies heavily on Bureau of Economic Analysis (BEA) and Bureau of Labor Statistics (BLS) data from the recent past. These agencies have several standard scheduled revision points when preliminary data is updated and often revised. Significant revisions to measured changes in economic conditions and/or major economic policy changes can, and will, change IHS Markit forecast. These data have a three- to nine-month lag. It appears that official statistics may be slightly underestimating real conditions in Montana. This is best represented by quarter-to-quarter state GDP data which measure industrial output well (and on a very timely basis), while the service economy is measured with a greater lag and less precision. This forecast does not include any explicit adjustment for this potential underestimate of economic activity.
- Also contributing to the difficulty of tracking the changing dynamics of the Montana economy is the potential discrepancy between the various measures of employment activity. The most accurate data are found in the Quarterly Census of Employment and Wages (all payroll employment in the state) and the (sample) survey measures of employment from both the Current Employment Statistics (CES) survey of payroll establishments, and the model based estimates of total employment from the Local Area Unemployment Statistics (LAUS) system. Because the CES survey includes data on economic sector of employment, it is a key input to the IHS Markit state forecasts. Again, no specific adjustment has been made for this potential underestimate in the data feeding the income projections used to calculate the income tax forecast.
- Income tax wage withholding collections which do not suffer a significant lag, but may have other administrative and timing data noise, suggest that the trends in the labor and gross state product measures are generally correct, but the swings in the data may be more muted than reported. Labor data will be revised in late February by BLS. Complete QCEW data for FY 2016 will become available November 28th, 2016. These new data points and CY withholding data available in January will help identify if these estimates will need re-centering.
- Due to the interdependence of Montana adjusted gross income with federal adjusted gross income, changes in the federal tax code could have a significant effect on Montana income tax receipts. Holding all other factors constant, lower federal tax rates (and higher deductions) result in higher state tax collections, while higher federal tax rates (and lower deductions) reduce state tax collections. The state's negative exposure to these fluctuations is dampened due to the cap on federal income tax deductions.
- The Office of Budget and Program Planning (OBPP) monitors a wide range of economic reports, changes in IHS Markit forecasts, and state revenue collections closely and on an ongoing basis. As a general rule, monthly changes to the IHS Markit forecasts tend to have minor impact on the revenue estimates (+/- $5 million a fiscal year). These shifts tend to have less impact in the near-term (six months) and greater impact in the long term. Major quarterly updates that use BEA national income and product accounts updates can have a larger impact. Again the impact is more noticeable two or more years into the future (a general fund effect of roughly +/- $15 million per year).
- Major economic events can change the forecast to a greater degree and on a faster time scale than has been the norm. A significant federal program promoting infrastructure and an economic stimulus package in the new Congress could increase revenue significantly as soon as the second half of FY 2018. A failure to reach a federal budget agreement for federal fiscal year 2017 that resulted in a significant government shut down after December 9, 2016, would generate more policy uncertainty and could result in a decline in the revenue outlook.
- The IHS Markit forecasts dropped significantly for CY 2015 and CY 2016, since March 2015. The vast majority of the change happened between March 2015 and August 2016. The forecasts for CY 2017 and CY 2018 improved. Recently the forecasts for CY 2016 through CY 2018 have been stable.

Income by Category

Taxpayers report income on eleven lines on the tax return and these eleven income types are forecast separately. They can be organized into five general categories: wage, salary, and tip (labor) income; ownership income; taxable retirement income; net capital gains; and interest income. Graph 1 shows these categories and their relative proportion of total taxable income.

Graph 1
Personal Income Reported by Full Year Residents for Tax Year 2015

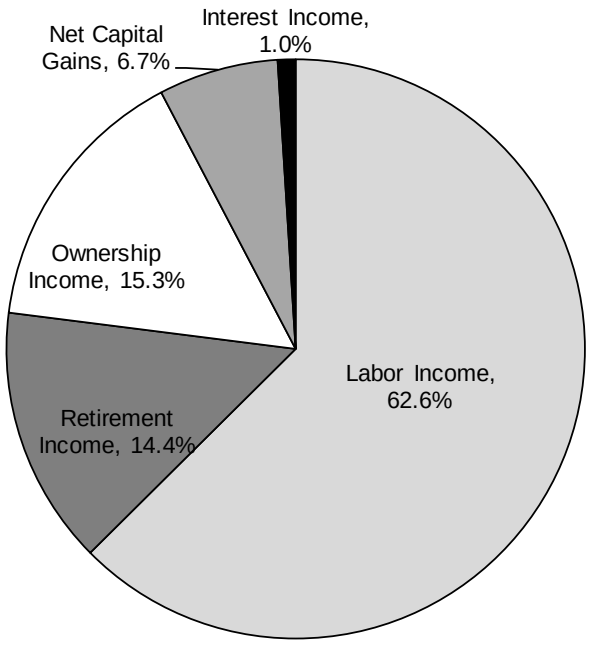


Table 2 provides more detail by showing the amount of income reported for TY 2015 by full-year residents and the percent of total reported income that category represents. The last column gives the ten-year (TY 2006 through TY 2015) average percent of total reported income for each category.

Table 2
Tax Year Income
($ millions)

Source of Income	TY 2015 Income	Distribution of TY 2015 Income	Ten Year Average Share of Income
Labor Income			
Wages, salaries, tips, etc.	**$16,521.352**	**62.58%**	**63.39%**
Ownership Income			
Rents, royalties, partnerships, etc.	$2,934.823	11.12%	9.78%
Net business income	$886.136	3.36%	3.41%
Dividend income	$679.792	2.57%	2.55%
Net farm income	-$150.769	-0.57%	-0.69%
Other income	-$310.593	-1.18%	-0.59%
Sub-Total	**$4,039.388**	**15.30%**	**14.46%**
Retirement Income			
Taxable portion of Soc. Sec.	$941.215	3.57%	2.98%
Taxable Pensions, IRAs	$2,867.702	10.86%	10.17%
Sub-Total	**$3,808.917**	**14.43%**	**13.16%**
Gains and Losses			
Capital gain or (loss)	$1,647.880	6.24%	6.64%
Supplemental gains or (losses)	$118.635	0.45%	0.30%
Sub-Total	**$1,766.515**	**6.69%**	**6.94%**
Interest Income	**$264.813**	**1.00%**	**2.05%**
Total	**$26,400.986**	**100.00%**	**100.00%**

Tables 3 through 11 present the historical and forecast income for above categories. Following each table, the risks and significant factors for the forecast are listed. Forecast growth rates for the income sources, deductions, reductions, and credits are summarized in Table 12. All charts depict income reported by full-year residents. **With the exception of wages and salaries, the vertical scale is held constant at a range of $0 to $5 billion in taxpayer income.** This representation better reflects the relative importance of each revenue stream. **The vertical scale for wages and salary income is five times the range of the other sources of income.**

The reader is cautioned that Table 2 through Table 12 present total income before taxes.

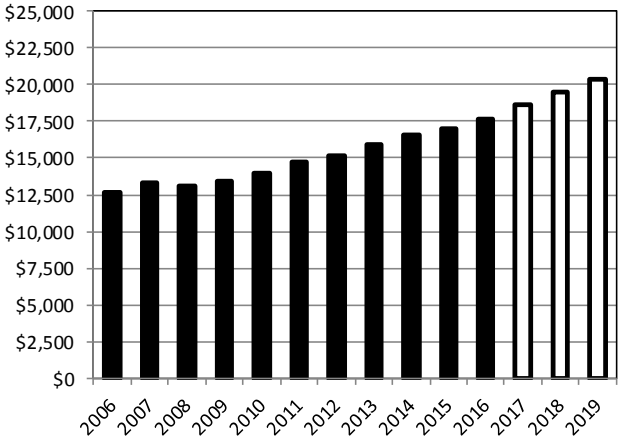
In TY 2015, on average, every $10,000 of income attributable to full-year resident individual income taxpayers' generated roughly $449 in FY 2016 state individual income tax.

Labor Income

Individual income taxes on wage and salary earnings are the principal source of state government tax revenue.

Table 3
Wages, Tips, and Salary Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$12,670	57.8%
A 2007	$13,352	5.4%
A 2008	$13,137	-1.6%
A 2009	$13,390	1.9%
A 2010	$13,996	4.5%
A 2011	$14,686	4.9%
A 2012	$15,190	3.4%
A 2013	$15,912	4.8%
A 2014	$16,521	3.8%
A 2015	$17,033	3.1%
F 2016	$17,703	**3.9%**
F 2017	$18,596	**5.0%**
F 2018	$19,499	**4.9%**
F 2019	$20,391	**4.6%**



Risks and Significant Factors

- The level of total Montana employment has a large effect on labor income. If the level of employment does not increase at the rate anticipated, then labor income will be lower than forecast.
- The level of average annual wages received by Montanans has a direct effect on the total level of taxable labor income. Increases in average wages has a positive effect on tax collections.
- The combined effects of employment growth and increasing wages and salary income are expected to raise total income and wages at a moderate rate over the forecast period.
- The chief source of Montana labor sector data used by all forecasting services is based on CES survey data. The CES survey of establishments classifies firms by economic sector. LAUS administrative record and model based data focuses on total labor force and the employment characteristics of small areas. The CES is benchmarked annually based in large part on the QCEW and Census population controls. QCEW data are released with a six-month lag (first quarter 2016 data was released in September 2016).
- OBPP tracks withholding collections relative to forecast wages reported on Montana resident tax forms. In January 2017 this data will be used to benchmark the TY 2016 wage data estimate and to evaluate if the income tax estimate may need to be revised.
- Estimates naturally miss by a greater margin at significant turns in the economy and with major tax policy shifts.

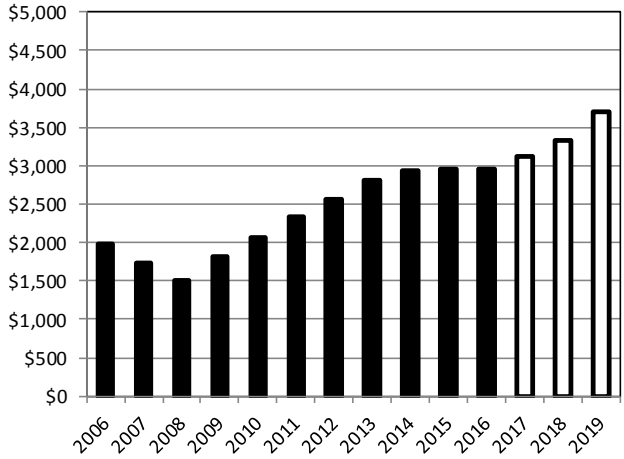
Ownership Income

Returns from owning property, businesses, farms, ranches, royalty rights or working interests in natural resources, processes, techniques, other intellectual property, or stock in companies and other non-financial instrument property generates the second largest source of taxable income. Principal among these are rents, royalties and partnership

income. This is followed by net business income, dividend income, net farm income, and other miscellaneous sources of income.

Table 4
Rents, Royalties, and Partnership Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$1,976.85	143.1%
A 2007	$1,735.15	-12.2%
A 2008	$1,508.40	-13.1%
A 2009	$1,823.26	20.9%
A 2010	$2,075.87	13.9%
A 2011	$2,340.91	12.8%
A 2012	$2,554.83	9.1%
A 2013	$2,812.60	10.1%
A 2014	$2,934.82	4.3%
A 2015	$2,950.00	0.5%
F 2016	$2,950.00	**0.0%**
F 2017	$3,129.21	**6.1%**
F 2018	$3,332.15	**6.5%**
F 2019	$3,698.64	**11.0%**

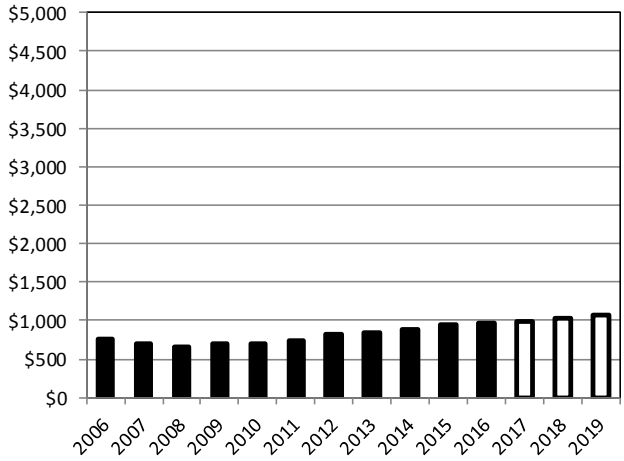


Risks and Significant Factors

- Department of Revenue work examining this income stream shows that much of this income is derived from structured payments from business or enterprise sales, a portion of these business ownership transfers are demographically driven and as such may accelerate faster than trend.
- The decline in natural resource prices are thought to be driving the flattening in this income source.
- Prices of natural resources are expected to stabilize and recover slowly, but recent declines are expected to suppress near-term growth of this component of this source while other underlying sources continue to grow. Property values are anticipated to continue recovering.
- The growth rate of rents and royalties income shows a strong relationship with national proprietors' income. If the economic recovery accelerates more (less) than expected, this income source would increase (decrease).
- Mineral royalties are reported in this income category. Increases in mineral, oil, and natural gas prices, as well as production, would increase growth of this income source.

Table 5
Net Business Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$762.06	27.2%
A 2007	$701.31	-8.0%
A 2008	$648.19	-7.6%
A 2009	$690.83	6.6%
A 2010	$702.19	1.6%
A 2011	$740.89	5.5%
A 2012	$820.12	10.7%
A 2013	$834.81	1.8%
A 2014	$886.14	6.1%
A 2015	$937.92	5.8%
F 2016	$966.68	**3.1%**
F 2017	$997.85	**3.2%**
F 2018	$1,037.27	**4.0%**
F 2019	$1,070.59	**3.2%**

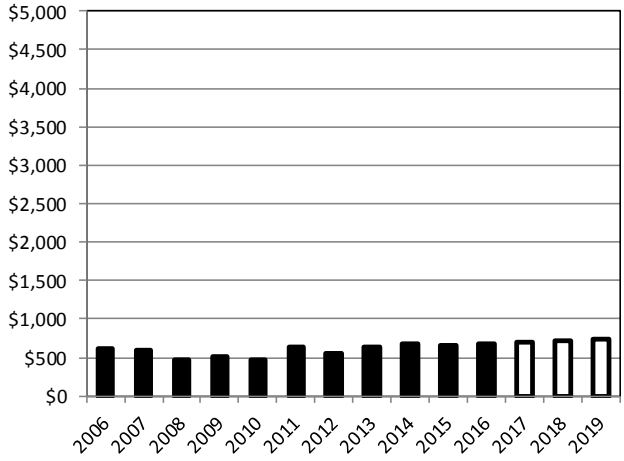


Risks and Significant Factors

- The growth in national proprietors' income is highly correlated with Montana net business income. Changes in national business income will have an impact on this source of income.
- Growth of these income streams are expected to moderate after recent surges.

Table 6
Dividend Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$619.82	82.3%
A 2007	$592.11	-4.5%
A 2008	$462.42	-21.9%
A 2009	$504.42	9.1%
A 2010	$465.23	-7.8%
A 2011	$627.61	34.9%
A 2012	$550.14	-12.3%
A 2013	$641.45	16.6%
A 2014	$679.79	6.0%
A 2015	$664.09	-2.3%
F 2016	$675.51	**1.7%**
F 2017	$701.83	**3.9%**
F 2018	$723.91	**3.1%**
F 2019	$744.35	**2.8%**



Risks and Significant Factors

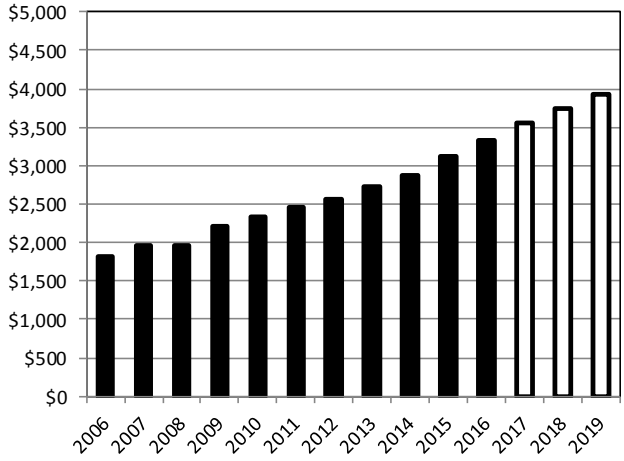
- Montana dividend income is highly correlated with the national level of dividend income. If national corporate profits are significantly different than forecast, dividend income will change accordingly.
- Corporations have experienced large increases in profits over recent years and have returned some of their cash reserves as special dividends in 2016.

Retirement Income

The main components of retirement income are pension and IRA income, and the taxable portion of social security income. Pension and IRA income exceeds social security income, but are more volatile. As the share of the population eligible for social security income grows, workers retire and claim retirement savings, thereby leading to acceleration in this income type.

Table 7
Pensions and IRA Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$1,812.79	63.7%
A 2007	$1,960.74	8.2%
A 2008	$1,963.91	0.2%
A 2009	$2,206.83	12.4%
A 2010	$2,345.00	6.3%
A 2011	$2,459.92	4.9%
A 2012	$2,569.39	4.5%
A 2013	$2,728.82	6.2%
A 2014	$2,867.70	5.1%
A 2015	$3,126.09	9.0%
F 2016	$3,329.92	**6.5%**
F 2017	$3,555.72	**6.8%**
F 2018	$3,747.45	**5.4%**
F 2019	$3,919.20	**4.6%**

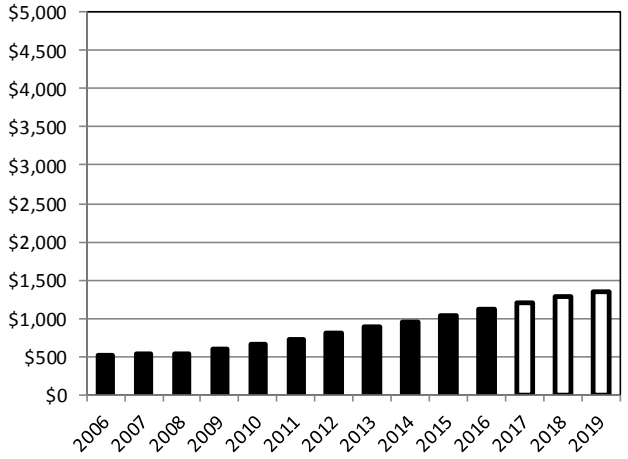


Risks and Significant Factors

- Prior years' S&P 500 stock price index and accelerating growth in the population over age 65 is expected to raise the taxable pension and IRA income stream.

Table 8
Social Security Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$508.64	131.4%
A 2007	$527.63	3.7%
A 2008	$540.62	2.5%
A 2009	$603.83	11.7%
A 2010	$651.77	7.9%
A 2011	$721.66	10.7%
A 2012	$803.83	11.4%
A 2013	$882.27	9.8%
A 2014	$941.22	6.7%
A 2015	$1,036.09	10.1%
F 2016	$1,124.61	**8.5%**
F 2017	$1,204.85	**7.1%**
F 2018	$1,278.31	**6.1%**
F 2019	$1,345.21	**5.2%**



Risks and Significant Factors

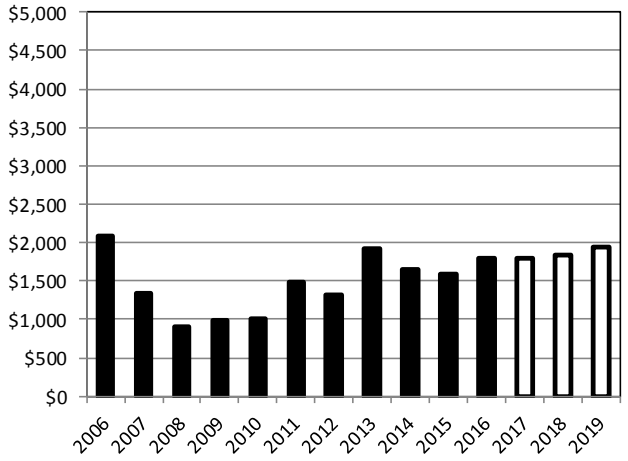
- Social security is indexed for inflation. If inflation remains lower than expected, this will have a negative effect on the growth of taxable social security income.
- Montana population age 65 and older is increasing. This increases the total amount of social security income.

Taxable Gains and Losses

Capital gains and supplemental gains are gains or losses from the sale of assets.

Table 9
Capital Gains and Losses Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$2,088.58	87.2%
A 2007	$1,337.81	-35.9%
A 2008	$912.04	-31.8%
A 2009	$992.63	8.8%
A 2010	$1,015.75	2.3%
A 2011	$1,491.20	46.8%
A 2012	$1,314.18	-11.9%
A 2013	$1,925.15	46.5%
A 2014	$1,647.88	-14.4%
A 2015	$1,589.47	-3.5%
F 2016	$1,797.20	**13.1%**
F 2017	$1,795.71	**-0.1%**
F 2018	$1,836.81	**2.3%**
F 2019	$1,932.51	**5.2%**



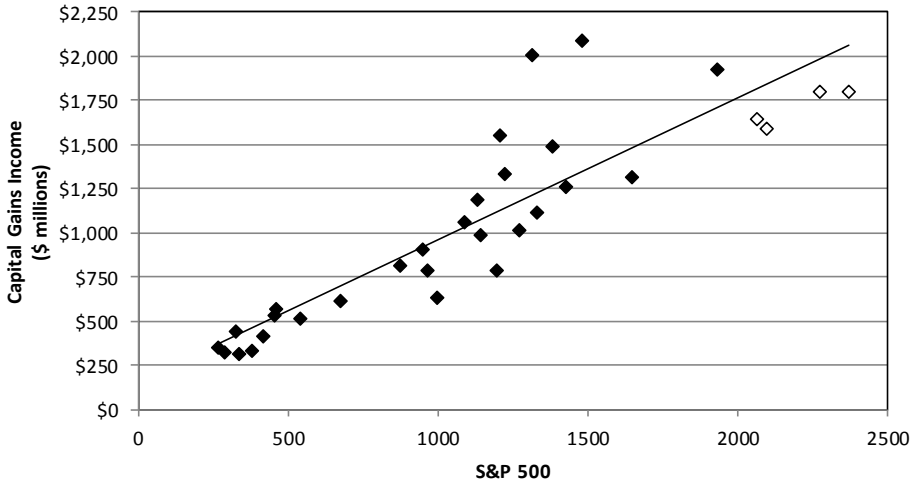
Risks and Significant Factors

- Stock prices serve as a general indicator of the value of assets; only a portion of capital gains are from sales of stocks, but stocks are assets for which reliable price data is available.

In Table 9, note the decline in capital gains income following the stock declines of CY 2007 and CY 2008. The relationship

between stock prices and capital gains is depicted in Graph 2 (below) with the forecast points indicated by white diamonds:

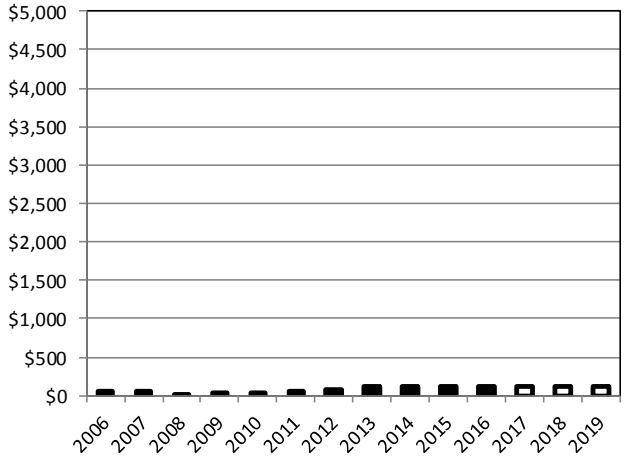
Graph 2
Capital Gains Income and the S&P 500



In the past, people with assets that have appreciated have responded to changes in capital gains rates by selling assets to realize gains during periods when tax rates are lower. This forecast assumes there is stable capital gains realizations.

Table 10
Supplemental Gains Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$66.37	49.5%
A 2007	$56.74	-14.5%
A 2008	$19.04	-66.4%
A 2009	$42.06	121.0%
A 2010	$41.88	-0.4%
A 2011	$53.11	26.8%
A 2012	$87.79	65.3%
A 2013	$116.10	32.2%
A 2014	$118.64	2.2%
A 2015	$116.38	-1.9%
F 2016	$117.70	**1.1%**
F 2017	$120.73	**2.6%**
F 2018	$123.28	**2.1%**
F 2019	$125.64	**1.9%**



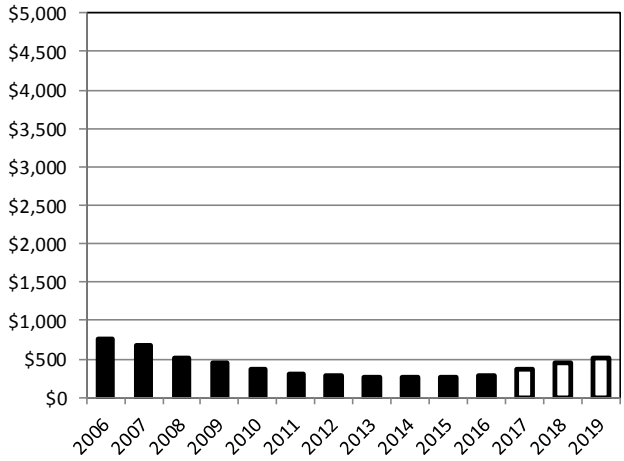
Risks and Significant Factors

- The swings in growth of supplemental gains income are tempered by the fact that it is small, contributing approximately one tenth of a percent of the taxable income stream.

Interest Income

Table 11
Interest Income
($ millions)

Tax Year	Income	Percent Change
A 2006	$756.83	25.6%
A 2007	$674.05	-10.9%
A 2008	$519.76	-22.9%
A 2009	$442.98	-14.8%
A 2010	$376.78	-14.9%
A 2011	$313.12	-16.9%
A 2012	$294.15	-6.1%
A 2013	$265.41	-9.8%
A 2014	$264.81	-0.2%
A 2015	$270.04	2.0%
F 2016	$276.05	**2.2%**
F 2017	$357.59	**29.5%**
F 2018	$456.34	**27.6%**
F 2019	$519.23	**13.8%**



Risks and Significant Factors

- While there have been increases in taxpayers' savings, this has been offset by the persistence of low interest rates. Interest rates are expected to begin rising late in the forecast period.

Other Sources of Income

Net taxable farm income has been on a long-term negative trend and is expected to hold that pattern.

The other income line is a catch-all for income that does not fit in the other categories. It is usually small and is forecast to grow at a rate based on historic trends.

Forecast Methodology

Income tax revenue estimates are based on a computer program that calculates tax liability for individual income tax returns. Baseline assumptions are listed in Table 12 at the end of this section.

Before program implementation:

- Growth rates for income and deductions must be estimated; and
- Future tax parameters, such as rate brackets and caps on deductions, must be calculated based on forecasts of inflation and any changes in state or federal law.

The tax simulation program is run to project tax liability. It does so by:

- Reading each full-year resident return in the latest year's income tax returns database;
- Calculates current year's tax liability for each return;
- Applies an annual growth rate to each of the income and deduction line items and calculates the next year's tax liability; and
- Repeats the process, growing income and deductions and calculating tax liability for each year of the forecast period.

Once the simulation program has estimated future years' tax liability for full-year resident taxpayers who filed in the past year, adjustments are made outside the model to produce projected fiscal year collections for all filers.

Adjustments are made for:

- Projected growth in the number of taxpayers;
- Changes to state and federal tax law;
- Fiscal year timing of calendar year tax liability;
- An estimate of revenue from less than full-time residents;

- Reductions in tax liability due to the use of tax credits;
- Accounting for revenue from audits, penalties and interest not already included in the base calculations; and
- Other adjustments for shifts due to legislation.

Distribution

All individual income tax revenue is distributed to the general fund.

Data Sources

Revenue data is from SABHRS and the Department of Revenue. Past employment and wage data are from the Bureau of Labor Statistics. Employment, wage, interest rate, inflation, and other economic forecasts are from the US and Montana IHS Markit forecast release as of October 2016.

Table 12
Actual and Projected Growth Rates for Line Items

	Actual							Forecast			
Income Item:	TY 2009	TY 2010	TY 2011	TY 2012	TY 2013	TY 2014	TY 2015	**TY 2016**	**TY 2017**	**TY 2018**	**TY 2019**
Wages, salaries, tips, etc.	-1.6%	1.9%	4.5%	4.9%	3.4%	4.8%	3.8%	3.1%	3.9%	5.0%	4.9%
Interest income	-22.9%	-14.8%	-14.9%	-16.9%	-6.1%	-9.8%	-0.2%	2.0%	2.2%	29.5%	27.6%
Dividend income	-21.9%	9.1%	-7.8%	34.9%	-12.3%	16.6%	6.0%	-2.3%	1.7%	3.9%	3.1%
Net business income	-7.6%	6.6%	1.6%	5.5%	10.7%	1.8%	6.1%	5.8%	3.1%	3.2%	4.0%
Capital gain or (loss)	-31.8%	8.8%	2.3%	46.8%	-11.9%	46.5%	-14.4%	-3.5%	13.1%	-0.1%	2.3%
Supplemental gains or (losses)	-66.4%	121.0%	-0.4%	26.8%	65.3%	32.2%	2.2%	-1.9%	1.1%	2.6%	2.1%
Rents, royalties, partnerships, etc.	-13.1%	20.9%	13.9%	12.8%	9.1%	10.1%	4.3%	0.5%	0.0%	6.1%	6.5%
Taxable IRAs and pensions	0.2%	12.4%	6.3%	4.9%	4.5%	6.2%	5.1%	9.0%	6.5%	6.8%	5.4%
Taxable portion of Soc. Sec.	2.5%	11.7%	7.9%	10.7%	11.4%	9.8%	6.7%	10.1%	8.5%	7.1%	6.1%
Net farm income	-12.6%	-21.0%	-12.3%	6.8%	2.0%	-16.9%	30.9%	-29.6%	-0.8%	-0.7%	-0.7%
All Other income	-1043.6%	-6.7%	806.2%	38.0%	-0.6%	5.6%	1.7%	-3.7%	0.7%	1.0%	-0.1%
Fed. Adj. to Income:	-9.5%	10.8%	3.7%	2.3%	9.6%	2.4%	4.6%	4.8%	4.3%	4.7%	4.2%
Montana Additions:	TY 2009	TY 2010	TY 2011	TY 2012	TY 2013	TY 2014	TY 2015	**TY 2016**	**TY 2017**	**TY 2018**	**TY 2019**
Interest on state, county, bonds	-2.3%	24.7%	-10.5%	-21.3%	12.3%	1.0%	-6.3%	1.8%	3.7%	3.9%	4.1%
Federal income tax refunds	0.3%	3.0%	-12.0%	12.9%	-4.8%	-5.7%	-1.8%	-2.3%	3.5%	1.2%	1.6%
All Other additions	25.3%	25.0%	5.5%	20.3%	-5.6%	-2.3%	2.2%	1.0%	-1.2%	-0.1%	0.5%
Montana Subtractions:	TY 2009	TY 2010	TY 2011	TY 2012	TY 2013	TY 2014	TY 2015	**TY 2016**	**TY 2017**	**TY 2018**	**TY 2019**
Farm risk management account	0.0%	0.0%	0.0%	-52.3%	-80.1%	119.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Exclusion for savings bonds	-27.8%	-17.1%	-16.9%	-13.5%	-13.2%	5.0%	-0.3%	-3.0%	4.4%	56.9%	43.9%
Unemployment income	70.2%	58.2%	-28.1%	-17.9%	-18.0%	-28.0%	-4.4%	7.3%	-6.0%	-2.4%	3.3%
Medical savings account excl.	3.0%	7.1%	3.5%	-3.1%	5.4%	-1.8%	0.7%	5.3%	5.1%	4.8%	4.6%
Family education account excl.	-3.8%	-0.7%	-0.3%	4.7%	37.2%	7.4%	4.5%	3.7%	3.6%	3.4%	3.3%
First-time homebuyers acct. excl.	31.9%	-49.6%	10.4%	26.9%	0.1%	8.3%	24.9%	1.5%	1.5%	1.5%	1.5%
Health Care Prof. Loan Pmt. excl.	25.8%	28.5%	39.8%	18.4%	11.6%	3.7%	35.2%	13.0%	5.8%	2.7%	1.3%
All Other Subtractions	14.4%	11.8%	14.6%	-1.6%	-6.6%	2.5%	3.7%	5.9%	5.9%	5.9%	5.9%
Itemized Deductions:	TY 2009	TY 2010	TY 2011	TY 2012	TY 2013	TY 2014	TY 2015	**TY 2016**	**TY 2017**	**TY 2018**	**TY 2019**
Medical insurance premiums	5.0%	2.6%	3.0%	1.1%	5.4%	-13.0%	42.7%	4.8%	4.8%	4.8%	4.8%
Medical deduction	-0.4%	-1.1%	-1.0%	-1.5%	-2.4%	-3.9%	2.0%	0.6%	0.7%	0.8%	0.8%
Long-term care insurance	-1.3%	4.2%	24.5%	-18.9%	6.8%	2.2%	1.4%	3.2%	3.1%	3.0%	2.9%
Balance of federal tax	-22.4%	-17.5%	20.7%	10.7%	43.9%	-0.7%	42.0%	9.3%	9.3%	9.3%	9.3%
Additional federal back year tax	63.1%	-48.3%	18.8%	-17.7%	61.4%	-35.6%	4.7%	13.4%	0.0%	0.0%	0.0%
Property taxes	3.3%	2.0%	2.4%	-1.0%	4.8%	2.6%	4.9%	2.7%	2.8%	3.5%	3.3%
Other Deductible taxes	2.7%	17.8%	-9.6%	-9.6%	3.2%	-8.9%	-0.8%	-1.3%	-1.3%	-1.3%	-1.3%
Home mortgage interest	-3.1%	-3.5%	-6.2%	-7.3%	-3.0%	-2.9%	54.6%	4.7%	4.7%	4.7%	4.7%
Deductible investment interest	-36.5%	18.2%	-10.0%	-22.9%	19.3%	-15.1%	1.6%	-0.4%	6.5%	6.0%	3.1%
Contributions	-3.8%	5.3%	3.4%	2.0%	5.6%	4.6%	4.1%	5.5%	5.5%	5.5%	5.5%
Child/dependent care expenses	-35.9%	-31.8%	8.8%	2.3%	46.8%	-11.9%	46.5%	-14.4%	-3.5%	13.1%	-0.1%
Casualty and theft losses	24.1%	-28.7%	97.9%	-26.8%	-17.7%	-13.2%	4.7%	0.0%	0.0%	0.0%	0.0%
Tier I - Miscellaneous	-10.6%	3.9%	10.5%	1.7%	7.1%	0.4%	-0.3%	3.9%	3.9%	3.9%	3.9%
Tier II - Miscellaneous	115.4%	-55.5%	-26.3%	4.7%	-13.4%	-23.2%	24.4%	-5.0%	0.0%	0.0%	0.0%
Gambling Losses	-0.2%	-1.3%	14.2%	-1.9%	45.2%	16.6%	10.5%	12.3%	12.3%	12.3%	12.3%
Credits	TY 2009	TY 2010	TY 2011	TY 2012	TY 2013	TY 2014	TY 2015	**TY 2016**	**TY 2017**	**TY 2018**	**TY 2019**
Total Allowable Credits	0.1%	23.9%	-24.9%	5.6%	7.6%	8.2%	3.5%	4.0%	4.0%	4.0%	4.0%
Full Year Resident Returns	528,318	530,507	534,102	537,294	547,927	553,024	553,761	557,190	559,048	562,558	566,878

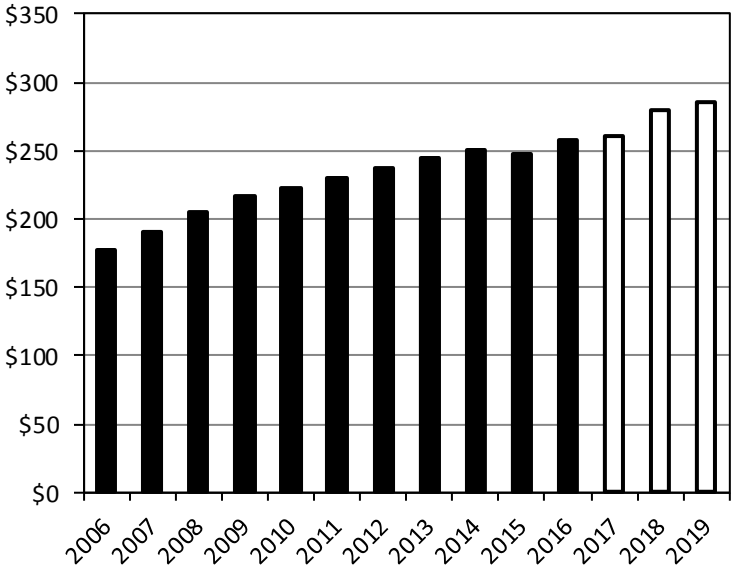
Revenue Description

Title 15, Chapter 6, Part 1, MCA, identifies the classes of property subject to taxation and the applicable tax rate. Property tax revenue is collected directly from mills levied on property and indirectly from non-levy revenue sources. The state general fund receives property tax revenue from statewide levies for: elementary school BASE funding of 33 mills (20-9-331, MCA), high school BASE funding of 22 mills (20-9-333, MCA), and the 40 mill state equalization aid levy (20-9-360, MCA), commonly referred to collectively as the 95 mill levy. In addition, there is a 1.5 mill levy on property in counties with colleges of technology (20-25-439, MCA). Non-levy revenues (principally coal gross proceeds and federal forest receipts) are shared with local taxing jurisdictions based on the proportion of state mills levied in the respective taxing jurisdictions.

Table 1 shows general fund property tax collections for FY 2006 through FY 2016 and forecast revenue for FY 2017, FY 2018, and FY 2019.

Table 1
Property Tax
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$177.639	6.20%
A 2007	$190.982	7.51%
A 2008	$205.036	7.36%
A 2009	$217.042	5.86%
A 2010	$222.510	2.52%
A 2011	$229.352	3.08%
A 2012	$236.662	3.19%
A 2013	$244.607	3.36%
A 2014	$250.344	2.35%
A 2015	$247.881	-0.98%
A 2016	$257.100	3.72%
F 2017	**$260.150**	**1.19%**
F 2018	**$279.620**	**7.48%**
F 2019	**$286.088**	**2.31%**



Risks and Significant Factors

-
- Property taxes constitute the largest statewide tax source – the state, local governments, schools, and special districts collected over $1.631 billion in property taxes and fees in TY 2015 (FY 2016).
- The major change in property tax legislation during the 2015 session was SB 157 which changed the reappraisal cycle from a six-year cycle property (agricultural, commercial, residential, and forest) to a two-year cycle for class 3 (agriculture) and class 4 (commercial and residential). Class 10 forest property remains on a six-year cycle but the valuation is now done on a 10-year average timber price basis. Tax rates were adjusted to apply to the full market value of the property with the elimination of the class 4 homestead and comstead exemptions. The Montana's Property Tax Assistance Program and Montana Disabled Veteran Property Tax Relief Programs were changed to account for the change in the class 4 residential property tax rate.
- Other 2015 session property tax legislation with revenue effects was HB 156 which exempted all new certified pollution control property (class 5) and new carbon sequestration property (generally class 15 property).
- Other property tax law changes had negligible revenue effects. These changes were: allowing industrial property owners direct appeal to the State Tax Appeal Board (HB 41); eliminating the contiguous parcel requirement in ag land valuations (HB 56); a clarification of Tax Increment Financing District remittances to school districts (HB

114); the explicit requirement of periodic application by tax exempt property owners to maintain their property's tax exempt status for a public posting of these properties (HB 389); SB 54 increased access for property owners challenging their assessments to comparable property assessment details; property tax exemptions for new qualifying ammunition manufacturers (SB 122); and a provision for property tax exemptions for land leased to local governments for public park, recreation, or landscape beautification (SB 308).

- Misclassification of non-levy revenues on county collection reports leads to inconsistencies in the allocation of these revenues between mill levy and non-levy revenue accounts in the state accounting (SABHRS) system.
- Major protested property tax settlements and court decisions (*Gold Creek and AT&T v. DOR* 2013 MT 273) have established precedent that has reduced centrally assessed (class 13) valuation base.
- Unanticipated growth in tax increment financing districts (TIFs) could lower state and local jurisdiction property tax collections.
- TY 2017 (FY 2018) marks the start of the next two-year periodic revaluation cycle for agricultural land (class 3 property) and commercial and residential real property (class 4 property). With the exception of class 10 property all other property is assessed annually. These estimates are based on present law reappraisal statutes.

Estimate Summary

The presentation of this forecast starts with a summary of the full general fund property tax estimate (Table 2). The summary is followed by a step-by-step presentation of the methodology used to estimate each component of the estimate.

Table 2
Summary of General Fund Property Tax Revenue
($ millions)

	--- Actual ---	---------- Forecast ----------		
	FY 2016[1]	**FY 2017**	**FY 2018**	**FY 2019**
Property Tax - 95 Mill Levy	$243.587	**$250.705**	**$271.16**	**$276.56**
Property Tax - 1.5 Mill Levy	$1.199	**$1.296**	**$1.337**	**$1.44**
Net Protested Property Taxes	-$2.481	**-$0.550**	**-$0.550**	**-$0.550**
Net Property Mill Levy Revenue	$242.306	**$251.451**	**$271.951**	**$277.451**
Non-Levy Revenue:				
Coal Gross Proceeds	$7.580	**$7.990**	**$6.959**	**$7.928**
Federal Forest Reserves	$2.780	**$0.419**	**$0.419**	**$0.419**
All Other (last known year)	$0.290	**$0.290**	**$0.290**	**$0.290**
Subtotal Non-Levy Revenue	$10.651	**$8.699**	**$7.669**	**$8.637**
Total Property Tax Revenue	$252.956	**$260.150**	**$279.620**	**$286.088**

[1] FY 2016 actual collections do not tie to SHBHRS totals in Table 1 because of cash vs. accrual accounting differences and County account misallocations in county collections reports.

Forecast Methodology

The property tax forecast is built by estimating growth rates for tax year (TY) assessed market value for each property class and converting the assessed market value into taxable value using statutory tax rates and exemptions. This method facilitates the estimation of the underlying property growth and minimizes the need for adjustments for local property tax abatements for state millage. Adjustments are made for tax increment financing districts (TIFs) which do not transfer state equalization levies to the state (or local millage to their respective districts) on their incremental taxable value. TIFs do transfer their six-mill university levies. The revenue due the state is then allocated to the fiscal year of receipt. A separate forecast is made for each non-levy revenue source. These estimates are summed to form the general fund property tax revenue estimate.

There are six main steps followed to calculate the state general fund property tax revenue generated from the 95 mill levy and the 1.5 mill levy:

Step 1. Estimate the growth rate for the assessed market value of each class of property.

Historical trends in valuation serve as the foundation for estimating future property value; adjustments are made for major new investments. Growth rates are determined independently for each class of property.

Table 3 is a summary of assessed market value and market value growth for all property except class 3 (agricultural land), class 4 (residential and commercial real property), class 10 (forest property), and class 16 (qualifying high-voltage direct current converter property). Classes 3, 4 and 10 will be presented in the section on cyclically reappraised property to address reappraisal timing of market value and underlying real growth in detail. The cyclically reappraised classes estimate follows the summary of all other classes of property. Class 16 has been assigned no value during the forecast period as the creation of any new property in this class is currently unknown.

Of note in Table 3 (below):

- **Class 1,** net proceeds of all mines assessed value (except metal mines and bentonite) is highly dependent on construction; the valuation is expected to oscillate around the long-run growth rate. The series presented is adjusted for the removal of bentonite from the class in TY 2005.
- The forecast for **Class 2**, net proceeds of metal mines, is based on the IHS Markit projection for the producer price for metals and current production. Metal mines property taxes are based on the prior calendar year's production value.
- **Class 5** (rural co-op and pollution control property) is adjusted for the effects of HB 156 (2015), (no new pollution control growth) the growth of the other property in the class is assumed to continue at trend.
- **Class 8** business equipment property underlying growth is estimated based on trend with adjustments for large one-time investments. SB 96 (2013) eliminated the taxation on the first $100,000 in assessed market value, widened the 1.5% tax bracket for the next $6 million in assessed market value, and set the tax rate for the amount over $6 million at a 3% tax rate. These changes have continued to lower the class 8 tax base. The class continues to grow but at a somewhat reduced trend rate after adjusting for settlements and pauses in investment growth following large commodity price declines.
- **Class 9** (pipeline and electrical transmission property) is expected to revert to a discounted long-term growth rate from before the recent surge in pipeline property and after recent valuation settlements.
- Centrally assessed **class 13** property valuation reductions due to court rulings and protested tax settlements are assumed to have been fully incorporated in the adjusted TY 2016 tax base. The class is forecast to return to its 10-year trend growth rate.
- **Class 14,** (formerly wind generation property) expanded rapidly with a particularly large increase due to the completion of the Montana-Alberta Tie Line. New facilities are assumed to offset depreciation of existing facilities while market value is held constant, a few new projects are expected to offset declines in value due to depreciation. Of special note, the expiration of tax incentives will lead to increase in taxable value.
- **Class 15,** includes the current pipeline supplying CO_2 for injection into the Bell Creek oil formation. This estimate does not include any new property in the class due to the passage of HB 156 (2015).

Table 3
Summary of Assessed Market Value
($ millions)

	Class 1 Net Proceeds		Class 2 Gross Proceeds		Class 5 Rural Co-Op & Pollution Control		Class 7 Locally Assessed Utilities		Class 8 Business Equipment (FY adjusted)	
Tax Year	Assessed Value	Percent Change	Assessed Value	Percent Change	Assessed Value	Percent Change	Assessed Value	Percent Change	Net Assessed Value	Percent Change
A 2006	$3.252	20.7%	$21.106	61.8%	$1,170.571	1.4%	$13.354	12.1%	$4,772.181	9.5%
A 2007	$3.840	18.1%	$28.347	34.3%	$1,181.927	1.0%	$13.698	2.6%	$5,248.938	10.0%
A 2008	$4.013	4.5%	$34.858	23.0%	$1,170.260	-1.0%	$15.179	10.8%	$5,737.691	9.3%
A 2009	$4.002	-0.3%	$31.035	-11.0%	$1,251.525	6.9%	$15.822	4.2%	$6,022.510	5.0%
A 2010	$3.181	-20.5%	$20.887	-32.7%	$1,299.811	3.9%	$16.229	2.6%	$6,238.758	3.6%
A 2011	$3.931	23.6%	$25.340	21.3%	$1,354.726	4.2%	$14.930	-8.0%	$6,464.672	3.6%
A 2012	$4.189	6.6%	$33.803	33.4%	$1,522.562	12.4%	$14.631	-2.0%	$7,024.756	8.7%
A 2013	$3.272	-21.9%	$29.723	-12.1%	$1,501.919	-1.4%	$15.023	2.7%	$7,200.080	2.5%
A 2014	$3.791	15.9%	$25.578	-13.9%	$1,485.501	-1.1%	$14.773	-1.7%	$7,088.731	-1.5%
A 2015	$3.907	3.1%	$26.517	3.7%	$1,550.769	4.4%	$14.866	0.6%	$7,250.378	2.3%
A 2016	$4.080	4.4%	$19.454	-26.6%	$1,636.805	5.5%	$14.241	-4.2%	$7,464.521	3.0%
F 2017	**$3.943**	**-3.4%**	**$17.716**	**-8.9%**	**$1,657.078**	**1.2%**	**$14.128**	**-0.8%**	**$7,821.814**	**4.8%**
F 2018	**$4.106**	**4.1%**	**$19.684**	**11.1%**	**$1,677.751**	**1.2%**	**$14.016**	**-0.8%**	**$8,196.615**	**4.8%**
F 2019	**$4.269**	**4.0%**	**$21.241**	**7.9%**	**$1,698.832**	**1.3%**	**$13.905**	**-0.8%**	**$8,589.780**	**4.8%**
F 2020	$4.132	**-3.2%**	**$22.221**	**4.6%**	**$1,720.328**	**1.3%**	**$13.795**	**-0.8%**	**$9,002.211**	**4.8%**
F 2021	$4.295	**3.9%**	**$22.809**	**2.6%**	**$1,742.248**	**1.3%**	**$13.685**	**-0.8%**	**$9,434.851**	**4.8%**

	Class 9 Pipelines & Electricity Transmission		Class 12 Airlines & Railroads		Class 13 Telecommunication & Electrical Generation		Class 14 Renewable Energy Production & Transmission		Class 15 CO2/Qualifying Liquid Pipeline Property	
Tax Year	Assessed Value	Percent Change	Assessed Value	Percent Change	Assessed Value	Percent Change	Assessed Value	Percent Change	Assessed Value	Percent Change
A 2006	$2,204.148	6.4%	$1,171.178	-1.1%	$2,354.749	14.9%	$170.379			
A 2007	$2,204.148	0.0%	$1,221.693	4.3%	$2,550.499	8.3%	$172.664	1.3%		
A 2008	$2,193.812	-0.5%	$1,246.504	2.0%	$2,583.395	1.3%	$196.252	13.7%		
A 2009	$2,120.180	-3.4%	$1,359.438	9.1%	$2,578.848	-0.2%	$434.939	121.6%		
A 2010	$2,338.609	10.3%	$1,524.594	12.1%	$2,904.257	12.6%	$596.308	37.1%		
A 2011	$2,535.219	8.4%	$2,067.948	35.6%	$3,427.557	18.0%	$571.444	-4.2%		
A 2012	$2,687.917	6.0%	$2,097.157	1.4%	$3,435.972	0.2%	$550.740	-3.6%		
A 2013	$2,947.230	9.6%	$2,197.681	4.8%	$2,876.381	-16.3%	$1,025.784	86.3%	$63.931	
A 2014	$3,122.440	5.9%	$2,221.753	1.1%	$2,831.344	-1.6%	$980.529	-4.4%	$117.162	83.3%
A 2015	$3,587.141	14.9%	$2,503.508	12.7%	$2,974.469	5.1%	$957.970	-2.3%	$165.687	41.4%
A 2016	$3,986.808	11.1%	$2,843.525	13.6%	$3,030.510	1.9%	$880.904	-8.0%	$171.450	3.5%
F 2017	**$4,230.228**	**6.1%**	**$2,983.789**	**4.9%**	**$3,109.303**	**2.6%**	**$880.904**	**0.0%**	**$171.450**	**0.0%**
F 2018	**$4,488.510**	**6.1%**	**$3,130.972**	**4.9%**	**$3,190.145**	**2.6%**	**$880.904**	**0.0%**	**$171.450**	**0.0%**
F 2019	**$4,762.562**	**6.1%**	**$3,285.415**	**4.9%**	**$3,273.089**	**2.6%**	**$880.904**	**0.0%**	**$171.450**	**0.0%**

Step 2. Estimate the growth of property subject to cyclical reappraisal (classes 3, 4, and 10).

For classes 3 and 4, growth is derived by calculating the interaction of long-run trends, new property growth, future (biennial) reappraisal. In the previous reappraisal cycle, reappraisal change was addressed through a gradual reduction in tax rates and progressively increasing "homestead" and "comstead" exemption rates. This held the taxable value of existing property essentially flat on a statewide basis (there is growth from new property). Per present law, tax rates are held constant, annual new property is added at trend, and valuations are adjusted for the anticipated two-year change in estimated property value. Preliminary estimates of TY 2017 reappraisal change are based on Department of Revenue public presentations in September 2016. These reappraisal estimates are approximations and not the final estimates

produced by the department's statistical modeling and appraisal activities. The growth rates closely matched those implied by the IHS Markit median family home valuation estimates.

Class 3 – Agricultural Land

Agricultural land is assessed based on the production value. Production valuation is assessed based on changes in reference agricultural products (cattle for grazing land, spring wheat for crop land, and alfalfa hay for irrigated land) and average production practices adjusted for soil and climatological characteristics of the property instead of market value. Table 4 presents the estimate of class 3 production value and taxable value growth. The base growth rate of agricultural is -0.15% during the forecast period. The negative growth rate is due to the gradual conversion of class 3 land to commercial and residential parcels. Due to reappraisal, the assessed value grows biennially based on the Olympic average change in the reference commodity prices The other feature of class 3 is that the applicable tax for agricultural property is higher than the statutory rate because small agricultural parcels that do not meet a minimum income threshold (non-qualified agricultural land), have a higher tax rate.

Table 4
Class 3 Agricultural Land
($ millions)

	TY 2015	**TY 2016**	**TY 2017**	**TY 2018**
Productivity Value	$6,263.14	**$6,304.53**	**$6,754.62**	**$6,744.48**
Statutory Tax Rate	2.16%	**2.16%**	**2.16%**	**2.16%**
(Applicable tax rate)	*2.26%*	***2.26%***	***2.26%***	***2.26%***
Total Taxable Value	$141.391	**$142.282**	**$152.486**	**$152.257**
Base Growth			**-0.15%**	**-0.15%**
Taxable Value Percent Change	-7.1%	**0.63%**	**7.17%**	**-0.15%**

Class 4 – Residential and Commercial Real Property

Because valuations for commercial and residential property are different, each subclass is estimated and presented separately for residential and commercial property.

Class 4 Residential Real Property

Table 5 presents the forecast of market and resulting taxable value for residential class 4 property. The forecast is based on underlying residential property growth of approximately 0.7% in TY 2017 and TY 2018 (TY 2016 is known). That estimate is based on prior year household growth estimates in order to project new property. This is combined with the TY 2017 preliminary reappraisal change estimate presented by the Department of Revenue to the Revenue and Transportation Interim Committee (RTIC) in September 2016. There is a reduction in taxable value for homeowners that qualify for the Property Tax Assistance Program (PTAP), and the Disabled American Veterans (DAV) property tax assistance program. The revenue effects of these programs, unlike local property tax abatements, reduce state mill collections. The taxable value for these tax programs are assumed to be a fixed share of taxable value during the forecast period.

Table 5 Class 4 Residential Real Property ($ millions)				
	TY 2015	TY 2016	**TY 2017**	**TY 2018**
Market Value	$88,490.56	$89,396.38	**$98,291.32**	**$9 8,979.36**
Homestead Rate	0.0%	0.0%	**0.0%**	**0.0%**
Taxable Market Value	$88,490.561	$89,396.383	**$98,291.324**	**$98,979.363**
Tax Rate	1.34%	1.35%	**1.35%**	**1.35%**
Taxable Value	$1,185.774	$1,206.851	**$1,326.933**	**$1,336.221**
Est. PTAP/DAV Reductions	($8.816)	($15.620)	**($17.17)**	**($17.29)**
Total Taxable Value	$1,176.958	$1,191.231	**$1,309.759**	**$1,318.927**
New Property	1.45%	1.02%		
Lagged household formation	0.86%	0.66%	**0.70%**	**0.70%**
Housing Value Change			**9.25%**	**0.00%**
Taxable Value Percent Change	4.82%	1.21%	**9.95%**	**0.70%**

Class 4 Commercial Real Property

Commercial real property estimates are presented in Table 6. Starting from TY 2016 property, new property is assumed to grow biennially with growth matching the prior cycle growth. That is further assumed to occur in the reappraisal year when the bulk of new propriety tends to be identified, and be zero in the subsequent year. Due to reappraisal, the market value of property moves biennially. For this estimate the Department of Revenue, September 2016, statewide average estimate is used.

Table 6 Class 4 Commercial Real Property ($ millions)				
	TY 2015	TY 2016	**TY 2017**	**TY 2018**
Market Value	$19,401.950	$19,328.31	**$21,610.80**	**$21, 610.80**
Comstead Rate	0.0%	0.0%	**0.0%**	**0.0%**
Taxable Market Value	$19,401.950	$19,328.312	**$21,610.797**	**$21,610.797**
Tax Rate	1.89%	1.89%	**1.89%**	**1.89%**
Calculated Taxable Value	$366.697	$365.305	**$408.444**	**$408.444**
Reductions	($4.225)	($4.505)	**($5.037)**	**($5.037)**
Total Taxable Value	$362.472	$360.800	**$403.407**	**$403.407**
Present Law	6.04%	-0.38%	**11.81%**	**0.00%**
Base Growth	3.59%	-0.38%	**3.21%**	**0.00%**
Change in Value	2.45%	0.00%	**8.60%**	**0.00%**
MV Percent Change	6.04%	-0.38%	**11.81%**	**0.00%**
Taxable Value Percent Change	3.37%	-0.46%	**11.81%**	**0.00%**

Certain properties classified under 15-6-134 (2)(c), MCA, are taxed at one-half of the standard class 4 tax rate. This taxable value reduction is assumed to be a constant share during the forecast period.

Class 10 Forest Land

Forest land, like agricultural land, is assessed based on its productivity value. Table 7 presents the estimate of class 10 taxable value. The base growth rate of forest land is assumed to be negative 0.5% in TY 2017 and TY 2018 as the value of Class 10 property is reduced when land is converted to commercial and residential parcels or reclassified as exempt property.

Table 7
Class 10 Forest Land
($ millions)

	TY 2015	TY 2016	**TY 2017**	**TY 2018**
Productivity Value	$1,330.151	$1,329.607	**$1,322.959**	**$1,316.344**
Tax Rate	0.37%	0.37%	**0.37%**	**0.37%**
Taxable Value	$4.922	$4.920	**$4.895**	**$4.870**
Base Growth	-0.50%	-0.50%	**-0.50%**	**-0.50%**
Taxable Value Growth	-20.81%	-0.04%	-0.51%	-0.50%

Step 3. Determine the tax rate for each class of property.

As stated previously, tax rates for each class of property are set in statute. However, classes 3 and 4 have special rates which apply to sub-categories of property. In class 3, parcels of agricultural land that are less than 160 acres in size that do not generate at least $1,500 in agricultural production per year are considered "non-qualified agricultural land" and have a tax rate seven times the standard class 3 rate. Because of this, the applicable rate is higher than the standard tax rate. This increment was calculated for the forecast period.

In class 4, residential properties of individuals who meet statutory residence, income, and qualifying conditions receive reduced tax rates (property tax assistance programs, disabled American veterans' programs, and extended property tax assistance programs). Some commercial properties are taxed at a lower than standard rate – examples are properties that receive new and expanding industry property (local) abatements and commercial golf courses (lower statutory class 4 rate). Under SB 372 and SB 96, class 8 property has a tiered tax rate. The class 8 effective statutory weighted average rate before local abatements is presented in Table 8 The table summarizes standard statutory property tax rates for TY 2015 through TY 2018 for all classes of property.

Table 8
Statutory Tax Rates by Class of Property

Tax Year	Class 1 Mine Net Proceeds	Class 2 Mine Gross Proceeds	Class 3 Ag Land[1]	Class 4 Residential	Class 4 Commercial	Class 5 Co-op & Pollution Control[4]	Class 7 Locally Assessed Utilities	Class 8 Business Equipment[3]	Class 9 Pipelines, Utility Non-Generating	Class 10 Forestland	Class 12 Airlines & Railroads[2]	Class 13 Telecomm & Electrical Generation	Class 14 Renewable Energy & Transmission	Class 15 CO_2/ Cert.Liquid Pipeline[4]	Class 16 High Voltage DC
2015	3.0%	3.0%	2.16%	1.35%	1.89%	3.0%	8.0%	2.07%	12.0%	0.37%	3.31%	6.0%	3.0%	1.5%	2.25%
2016	3.0%	3.0%	2.16%	1.35%	1.89%	3.0%	8.0%	2.07%	12.0%	0.37%	3.04%	6.0%	3.0%	1.5%	2.25%
2017	**3.0%**	**3.0%**	**2.16%**	**1.35%**	**1.89%**	**3.0%**	**8.0%**	**2.07%**	**12.0%**	**0.37%**	**3.02%**	**6.0%**	**3.0%**	1.5%	**2.25%**
2018	**3.0%**	**3.0%**	**2.16%**	**1.35%**	**1.89%**	**3.0%**	**8.0%**	**2.07%**	**12.0%**	**0.37%**	**3.02%**	**6.0%**	**3.0%**	1.5%	**2.25%**

[1] Actual rate is higher due non-qualified Ag land rate. [2] Class 12 rates is calculated on the weighed average of all commercial and industrial property in the prior year.
[3] Blended rate -- Tax on the first $100,000 in market value of business equipment property is excempt for all taxpayers, 1.5% on next $6 million, and 3.0% on all property above that level (SB 96)
[4] HB 156 excempted new (starting TY 2015) polution control equipment (Class 5) from taxation. New carbon dioxide pipelines for sequestration puposes receive a 15 year 50% tax rate reduction starting in TY 2015.

The class 12 tax rate is calculated under the provisions of the federal 4-R Act. The specific provisions of the act prohibit state, county, and local taxing jurisdictions from assessing rail transportation property at a higher ratio of assessed value to true market value than other commercial and industrial property within the jurisdiction. Class 12 property is assessed annually and is the weighted average tax rate for all commercial and industrial property in the state. Class 4 commercial property represents over half of statewide commercial and industrial property and is assessed on a two-year cycle. In order to comply with the 4-R Act, the Department of Revenue uses commercial property sales to calculate the required adjustment to the class 4 commercial tax rate used in the class 12 weighted average. This revenue estimate assumes

the class 12 rate is constant for the forecast period since class 4 commercial property is now assessed on a biennial basis instead of a six-year cycle. The tax rate for TY 2016 was published by Department of Revenue in June, 2016.

Step 4. Calculate the statewide fiscal year taxable value for each class of property.

For all classes of property except class 8, the tax collected on the calendar year taxable value is the next fiscal year's revenue. That is, TY 2016 property assessments lead to FY2017 revenue. However, class 8 business equipment property consists of two types of property each with a different billing cycle. Class 8 taxable value needs to be adjusted for the timing of payments. Personal property, not liened-to-real property (or strict-personal property), represents about 30% of the value in the class. This property is assessed in the spring of the calendar year and bills are expected be paid in May of the respective ongoing current fiscal year. Class 8 real property and class 8 personal property, liened-to-real property (secured permanently or legally to real property), represents 70% of the value of the class and have tax payments due in November and May. Therefore, FY 2017 taxable value is 70% of TY 2016 taxable value and 30% of TY 2017 taxable value. The class 8 taxable value presented in the summary of taxable value (Table 9) includes this adjustment.

Note: The discussion from this point forward will focus on fiscal year outcomes.

Table 9 presents the result of applying statutory tax rates (Table 8) to tax year assessed values adjusted for the expected timing of the state's property tax receipts.

Table 9
Calculated Statewide Fiscal Year Taxable Value Summary
($ millions)

Class & Property Description	FY 2016	FY 2017	FY 2018	FY 2019
1. Net Proceeds	$3.907	**$4.080**	**$3.943**	**$4.106**
2. Mine Gross Proceeds	$26.517	**$19.454**	**$17.716**	**$19.684**
3. Agricultural Land	$141.391	**$142.282**	**$152.486**	**$152.257**
4. Residential & Commercial Real Property	$1,539.430	**$1,552.031**	**$1,713.165**	**$1,722.334**
5. Rural Co-Op Utilities and Pollution Control	$46.523	**$49.104**	**$49.712**	**$50.333**
7. Non-centrally Assessed Util.	$1.189	**$1.139**	**$1.130**	**$1.121**
8. Business Equipment (FY adjusted)	$150.392	**$154.834**	**$162.245**	**$170.019**
9. Pipelines, Electrical Transmission Lines	$430.457	**$478.417**	**$507.627**	**$538.621**
10. Forest Land	$4.922	**$4.920**	**$4.895**	**$4.870**
12. Airlines/Railroads	$74.354	**$85.934**	**$90.173**	**$94.621**
13. Telecommunication & Electrical Generation	$178.468	**$181.831**	**$186.558**	**$191.409**
14. Renewable Energy Production & Transmission	$16.881	**$17.649**	**$18.527**	**$19.317**
15. CO2/Qualifying Liquid Pipelines	$2.485	**$2.572**	**$2.572**	**$2.572**
16. High Voltage DC Converter Property	$0.000	**$0.000**	**$0.000**	**$0.000**
Statewide Taxable Value	$2,616.915	**$2,694.247**	**$2,910.750**	**$2,971.264**

Table 10 presents the annual change in the forecast taxable values (from Table 9), by class, to facilitate comparability to the estimates presented by the Legislative Fiscal Division. These growth rates are important in projecting taxable value for property tax fiscal impact estimates.

Table 10
Forecast Annual Percent Change in Taxable Value

Class & Property Description	FY 2016	FY 2017	FY 2018	FY 2019
1. Net Proceeds	3.08%	**4.42%**	**-3.36%**	**4.12%**
2. Mine Gross Proceeds (w/o Abatements)	3.67%	**-26.63%**	**-8.94%**	**11.11%**
3. Agricultural Land	-7.09%	**0.63%**	**7.17%**	**-0.15%**
4. Residential & Commercial Real Property	1.34%	**0.82%**	**10.38%**	**0.54%**
5. Rural Co-Op Utilities and Pollution Control	4.39%	**5.55%**	**1.24%**	**1.25%**
7. Non-centrally Assessed Util.	0.63%	**-4.20%**	**-0.80%**	**-0.79%**
8. Business Equipment (FY adjusted)	-0.22%	**2.95%**	**4.79%**	**4.79%**
9. Pipelines, Electrical Transmission Lines	14.88%	**11.14%**	**6.11%**	**6.11%**
10. Forest Land	-20.81%	**-0.04%**	**-0.51%**	**-0.50%**
12. Airlines/Railroads	3.22%	**15.57%**	**4.93%**	**4.93%**
13. Telecommunication & Electrical Generation	5.05%	**1.88%**	**2.60%**	**2.60%**
14. Renewable Energy Production & Transmission	1.87%	**4.55%**	**4.97%**	**4.26%**
15. CO2/Qualifying Liquid Pipelines	-29.3%	**3.5%**	**0.0%**	**0.0%**
16. High Voltage DC Converter Property	0.0%	0.0%	0.0%	0.0%
Statewide Taxable Value Growth	3.0%	**3.0%**	**8.0%**	**2.1%**

Step 5. Determine the taxable value base for statewide mill levies and 95 mill revenue.

In order to calculate the 95 mill revenue due the state, adjustments need to be made for Tax Increment Financing Districts (TIFs). TIFs do not transfer all the 95 mill revenue generated in the district. These districts (authorized under Title 7, chapter 14, part 42, MCA) retain the taxes generated from all millage in the district (except the 6 mill university levies) on the taxable value greater than the taxable value existing in the district when it was created, commonly referred to as the "TIF incremental value". TIFs have a finite duration, tied to the districts initial charter (generally 15 years). Districts can be extended, generally to cover bonded debt. The 95 mill revenue generated from these increments must be deducted from the estimate of state property tax revenue. This estimate grows TY 2016 TIF incremental taxable value by statewide average taxable value growth. During the forecast period, only one TIF district is likely to expire.

Because the calculation of total property tax revenue is estimated by applying the standard statutory tax rates to the assessed market value property base, no adjustment is needed for locally abated property. Table 11 displays the calculation of state revenue generated from the 95 mill levies.

Table 11
Calculation of General Fund Revenue from 95 Mill Levy
($ millions)

Calculation	FY 2016	FY 2017	FY 2018	FY 2019
Statewide (FY) Taxable Value	$2,616.915	**$2,694.247**	**$2,910.750**	**$2,971.264**
Subtract TIF Value	($52.837)	**($55.244)**	**($56.392)**	**($60.141)**
Taxable Value for 95 Mills	$2,564.078	**$2,639.004**	**$2,854.358**	**$2,911.122**
Apply 95 Mills	0.095	**0.095**	**0.095**	**0.095**
State Revenue from 95 Mills	$243.587	**$250.705**	**$271.164**	**$276.557**

Table 12 shows the forecast for the 1.5 mill levy revenue for colleges of technology and is based on the taxable value in counties with colleges of technology after adjusted for county TIFs.

Table 12
Property Tax 1.5 Mill Levy General Fund Revenue
($ millions)

	FY 2016	**FY 2017**	**FY 2018**	**FY 2019**
COT County Taxable Value	$892.940	**$919.791**	**$993.703**	**$1,014.362**
COT County TIF Value	($29.201)	($28.312)	($30.587)	($31.223)
Taxable Value for 1.5 Mills	$863.739	**$891.479**	**$963.116**	**$983.139**
Apply 1.5 Mills	0.0015	**0.0015**	**0.0015**	**0.0015**
1.5 Mill Levy Revenue	$1.296	**$1.337**	**$1.445**	**$1.475**

Step 6. Calculate total general fund property tax revenue due from mill levies and non-levy revenues.

The main non-levy revenues are shared by counties and the state based on the relative distribution of state and local mills. These include coal gross proceeds (in counties that have coal production) and federal forest receipts (in counties that have national forest acreage). Additionally, there is an assortment of miscellaneous revenues that are collected by counties that are shared with the state based on the proportionate share of statewide equalization mills and local education mills.

The base for coal gross proceeds non-levy revenue is the coal severance tax reports. The coal gross proceeds tax is a 5% levy on the gross value of coal produced. The state receives the TY 1989, elementary and high school mills (55 mill) share of the coal gross proceeds tax collections state to local education mill distribution. Under SB 266 (2011 session), the coal gross proceeds tax rate for underground mines was reduced to 2.5% for an initial period of ten years. The reduced tax rate would be available to any new underground mine for the first ten years of production. The bill also granted counties the ability to abate up to 50% of local coal gross proceeds distributions.

Beginning with FY 2009, the federal Secure Rural Schools and Communities Act (SRS) was reauthorized and fully funded through FY 2012 under the Emergency Economic Stabilization Act of 2008. The Act was reauthorized and funded for FY 2013 by Public Law 112-141, in July 2012. The SRS program was reauthorized by section 524 of P.L. 114-10 and signed into law in April, 2015 which extended payments through FY 2016. SRS has not been reauthorized as of the end of October 2016. The final total SRS Title I payments were $15.5 million. The expiration of the SRS Act means payments will revert to the 1908 Act 25% distribution of the seven-year average of federal forest receipts. Federal forest receipts are anticipated to be around $2.3 million. The state receives the 55 mill share of one-third of these Title I funds allocated to countywide school levies. In recent years, that has meant approximately 17.8% of all Title I payments accrue to the state general fund due to the proportional share of school equalization mills. These are anticipated to be about $425,000. The state share of the final SRS payments in FY 2016 was about $2.78 million.

All other non-levy revenues are set at the level of the last known year's total (FY 2015). The FY 2016 payments will be known in December when the audited county collections report become available.

Table 13 combines the 95 mill revenue, 1.5 mill revenue, anticipated centrally assessed protested property taxes (net of known settlements) that may be allocated to the protested reserved account, and non-levy revenues. Table 13 restates the values presented earlier in the property tax estimate summary (Table 2).

Table 13
Summary of General Fund Property Tax Revenue
($ millions)

	--- Actual ---	---------- Forecast ----------		
	FY 2016[1]	**FY 2017**	**FY 2018**	**FY 2019**
Property Tax - 95 Mill Levy	$243.587	**$250.705**	**$271.16**	**$276.56**
Property Tax - 1.5 Mill Levy	$1.199	**$1.296**	**$1.337**	**$1.44**
Net Protested Property Taxes	-$2.481	**-$0.550**	**-$0.550**	**-$0.550**
Net Property Mill Levy Revenue	$242.306	**$251.451**	**$271.951**	**$277.451**
Non-Levy Revenue:				
Coal Gross Proceeds	$7.580	**$7.990**	**$6.959**	**$7.928**
Federal Forest Reserves	$2.780	**$0.419**	**$0.419**	**$0.419**
All Other (last known year)	$0.290	**$0.290**	**$0.290**	**$0.290**
Subtotal Non-Levy Revenue	$10.651	**$8.699**	**$7.669**	**$8.637**
Total Property Tax Revenue	$252.956	**$260.150**	**$279.620**	**$286.088**

[1] FY 2016 actual collections do not tie to SHBHRS totals in Table 1 because of cash vs. accrual accounting differences and County account misallocations in county collections reports.

Distribution

The general fund receives 100% of the 33 mill elementary equalization levy, the 22 mill high school equalization levy, and 40 mill state equalization aid levy, as well as the 1.5 mill levy for colleges of technology. Only the state general fund portion of non-levy revenues are presented in Table 13.

Data Sources

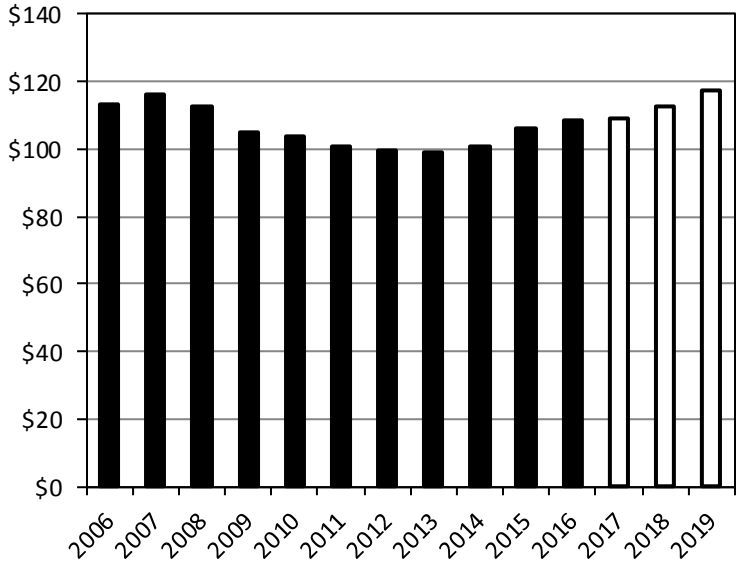
Tax collections are extracted from the state accounting system (SABHRS). The summary property tax database and other property tax reports were provided by the Department of Revenue. The Office of Public Instruction prepares the FP6b summary of county school revenues used in the estimates of “all other” non-levy revenue. The producer price index for metals is from the IHS Markit, October 2016, US forecast.

Revenue Description

Title 23 and Section 61-3-221 and 61-3-562, MCA, provide for multiple fees and fees-in-lieu of taxes on motor vehicles, which include light vehicles, heavy vehicles weighing more than one ton, motor homes, trailers, travel trailers, watercraft, motorcycles, snowmobiles, and off-highway vehicles. Fees are based on one or a combination of the following criteria: age, weight, size, and vehicle type. Registration fees for light vehicles (cars, light trucks, and sport utility vehicles) represent approximately three-fourths of general fund revenue from motor vehicle fees. Table 1 shows actual revenue for vehicle taxes and fees to the general fund for FY 2006 - FY 2016 and forecast revenue for FY 2017 - FY 2019.

Table 1
Vehicle Taxes and Fees
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$113.292	2.28%
A	2007	$116.455	2.79%
A	2008	$112.486	-3.41%
A	2009	$104.678	-6.94%
A	2010	$103.858	-0.78%
A	2011	$100.569	-3.17%
A	2012	$99.763	-0.80%
A	2013	$99.144	-0.62%
A	2014	$100.968	1.84%
A	2015	$106.381	5.36%
A	2016	$108.479	1.97%
F	**2017**	**$109.200**	**0.66%**
F	**2018**	**$112.700**	**3.21%**
F	**2019**	**$117.500**	**4.26%**



As mentioned above, the lion's share of motor vehicle general fund revenue comes from annual registration fees of light vehicles. Vehicles 0-4 years old (new age cohort) and 5-10 years old (mid age cohort) must register on an annual basis. Vehicles over the age of 10 years (old age cohort) have the option of registering annually or registering permanently. Once a vehicle undergoes permanent registration, it is no longer subject to annual fees unless it changes ownership. The stock of cars and trucks that register on an annual basis consists of approximately 830,000 vehicles. This number does not include permanent registrations, which average about 50,000 per year. So, within a year, there is a stock of approximately 880,000 light vehicles that pay registration fees to the State of Montana.

The age distribution of the vehicle stock influences total revenue collections because newer vehicles are subject to higher fees than older vehicles. Annual registration fee amounts range from $217 for vehicles in the new age cohort, $87 for vehicles in the mid age cohort, and $28 for vehicles in the old age cohort. The fee for permanent registration is $87.50. New vehicles generally account for between 20% and 25% of total registrations in a year, while mid vehicles account for 30% to 35%, and old vehicles consistently constitute around 40%. Permanent registrations make up the remaining 5% of total registrations. In revenue terms, vehicles in the new cohort generate between 50% and 60% of annual light vehicle registration revenue. Mid cohort vehicles account for approximately 25% of registration revenue and old cohort vehicles contribute close to 12% of revenue. Similar to their share of total registrations, vehicles registering permanently bring in about 5% of annual revenue. New cohort registrations have a disproportionate effect on revenue collections because the fee associated with this age class is over two times higher than the mid cohort fee and over seven times higher than the old cohort fee. Consequently, the number of vehicles in the new cohort has a large impact on motor vehicle revenue, and significant changes in the proportion of new cohort registrations to total registrations tend to have persistent effects on revenue collections because of the way vehicles flow through the registration system.

Registration of vehicles other than light vehicles offers a relatively stable source of revenue, accounting for between 13% and 14% of total motor vehicle revenue annually. These vehicles include heavy trucks, watercraft, trailers, off-highway vehicles, and others. A small portion of motor vehicle revenue comes from fees associated with the issuance of titles, license plates, etc. Revenue from these fees is driven primarily by the volume of new vehicle sales because new vehicles require titles and license plates. There are numerous general fund accounts into which vehicle taxes and fee revenue is recorded. Table 2 summarizes revenue collections by grouping similar fees into broad categories. These groupings include revenue from registrations of light vehicles, registrations of other vehicles, permanent registrations, and fees associated with titles, license plates, and related items.

Table 2
Actual Vehicle Taxes and Fee Revenue by Grouped SABHRS Accounts
($ millions)

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Light Vehicle Registrations	$78.443	$76.880	$75.585	$76.533	$78.982	$81.361
Other Vehicle Registrations	$12.406	$13.812	$13.413	$13.668	$14.449	$14.321
Other Fees	$5.212	$5.543	$5.684	$6.029	$7.602	$7.299
New Plates	*$0.529*	*$0.554*	*$0.535*	*$0.850*	*$1.953*	*$1.484*
Specialty Plates	*$1.421*	*$1.446*	*$1.446*	*$1.441*	*$1.476*	*$1.469*
Titles	*$2.286*	*$2.387*	*$2.444*	*$2.457*	*$2.684*	*$2.791*
Other	*$0.977*	*$1.156*	*$1.259*	*$1.282*	*$1.488*	*$1.554*
Permanent Registrations	$3.000	$3.528	$4.461	$4.738	$5.348	$5.497
Light Vehicles		*$3.421*	*$3.960*	*$4.220*	*$4.772*	*$4.856*
Motor Homes		*$0.107*	*$0.501*	*$0.518*	*$0.576*	*$0.641*
Total	**$99.061**	**$99.763**	**$99.144**	**$100.968**	**$106.381**	**$108.479**

Risks and Significant Factors

- Once a vehicle is purchased, it flows through the three age cohorts over the course of its life and eventually exits the vehicle revenue base when it is permanently registered (unless it changes ownership) or is removed from service. This flow-like nature of annual registrations results in rises and dips in the population of vehicle age classes. Since these fluctuations persist in the annual registration revenue pool as vehicles move through the different age cohorts, significant shocks to new vehicle purchases can result in the growth or erosion of an age cohort's revenue base.
- Nationally, new vehicle sales have been strong in recent years, humming along at annual sales rates of 16 - 18 million vehicles. Montana new vehicle sales have been strong as well, boosting new cohort registration revenue in FY 2015 and FY 2016. Growth is expected to continue in Montana vehicle sales for FY 2017 - FY 2019.
- Motor vehicle revenue responded to the decrease in light vehicle purchases that occurred during the most recent recession, dropping steadily from FY 2007 to FY 2013. Because of the cohort nature of motor vehicle revenue, the effects of this recession-induced decline in new light vehicle purchases (particularly in FY 2009 and FY 2010) will move through each registration category as the vehicles age. The recession eroded the revenue base for new cohort vehicles from FY 2009 through FY 2013, and started to effect registration revenue for mid cohort vehicles in FY 2014. Mid cohort registration revenue dropped significantly in FY 2015 and FY 2016 as the recessionary dip in new vehicle purchases moved more wholly into this age category. Mid cohort registration revenue will remain depressed over the forecast period due to a relatively smaller stock of vehicles. The effect on total motor vehicle revenue, however, is mitigated by the fact that middle-aged vehicles pay two-and-a-half times less in registration fees than new vehicles. The decrease in mid cohort vehicle registration revenue will be more than made up for by the number of new entrants into the 0-4 year age cohort.
- Only vehicles over 10 years old can register permanently, and in recent years around 5% of all annual light vehicle registration revenue was collected from vehicles that were registering permanently. Permanently registered

vehicles only re-enter the vehicle tax collection system upon a change of ownership. For a permanently registered vehicle that changes ownership, the duration of the vehicle's presence in the tax collection system depends on the decision of the new owner to either register the vehicle annually or permanently. This change in ownership of permanently registered vehicles is a source of forecasting error because it is difficult to estimate how many previously permanently registered vehicles reappear in the revenue pool.

Forecast Methodology

The method employed to forecast motor vehicle taxes and fees revenue is outlined below. There are four steps in the estimating process. The first step is to estimate the age distribution of vehicles in the registration pool, i.e. the number of vehicles registering in each of the new, mid, and old age cohorts along with permanent registrations. Second, total annual light vehicle registration revenue is calculated. Each annual registration cohort is associated with a different fee, and total registration revenue for each cohort is the product of the registration count and the fee amount. Third, revenue from other vehicle registrations and fees is determined, except for permanent registrations. In the fourth step, revenue from all sources is combined along with permanent registration revenue to arrive at the amount to be deposited in the general fund.

Step 1. Age Distribution of the Motor Vehicle Stock

Table 3 presents the actual and estimated distribution of annually registering vehicles by age cohort by fiscal year. The population of the 0-4 year age group is expected to grow throughout the forecast period. Rising vehicle sales leads the population of the new cohort higher. Conversely, the population of the 5-10 year group is expected to keep declining through FY 2019. The groups of vehicles entering the mid cohort during FY 2017 - FY 2019 will not be large enough to offset the groups exiting, leading to a net loss in the population of the mid cohort for each year in the forecast period. The old cohort is expected to grow in size over the next three years as a large group of vehicles reaches 11+ years of age. Not all vehicles permanently register once they reach 11 years of age. Permanent registrations are expected to increase, but not to an extent that inhibits growth in the group of old cohort vehicles registering on an annual basis. Overall, the population of annually registering vehicles is projected to increase over the forecast period as new entrants into the pool exceed exits.

New Cohort. The total number of vehicles in the new cohort is estimated by first starting with the population of the new cohort in the previous year and adding estimated new vehicle sales. Then, the number of vehicles turning over into the mid age cohort is subtracted out. Finally, an adjustment is made to account for vehicles that enter the new age cohort for reasons other than new sales (e.g. move to Montana from out-of-state), and vehicles that exit the cohort for reasons other than switching to the mid cohort (e.g. removed from service, or move out of Montana).

Mid Cohort. The population of vehicles in the mid cohort for a given year is estimated in a similar manner as above. Vehicles leaving the new cohort and entering the mid cohort are added to the prior year's population and vehicles turning over into the old cohort are subtracted out. The net gain or loss from vehicles moving in or out of Montana, as well as vehicles removed from service is accounted for as well.

Old Cohort. Primary new entrants into the old cohort consist of vehicles achieving 11 years of age and moving out of the mid cohort. Vehicles also show up in the old cohort if they change ownership and move from being permanently registered to registering annually. An estimate of this new population in the old cohort is added to the prior year's old cohort population. Estimated permanent registrations and vehicle disappearance are then subtracted away to arrive at the number of annually registering vehicles in the old cohort.

Permanent Registrations. Future permanent registrations are estimated to experience similar growth to prior years due to a steady flow in the number of vehicles reaching over 10 years of age. Vehicles that register permanently contribute revenue in the year that they register, but do not pay registration fees for their remaining time on the road unless they change ownership, in which case the vehicle must be permanently registered again by the new owner. Table 3 shows the number of vehicles that permanently register each year as well as an estimate of the cumulative number of permanently registered vehicles in Montana. Cumulative permanent registrations are calculated by adding new permanent registrations to the existing total minus an estimate of vehicles that leave the pool.

Table 3 Distribution of Light Motor Vehicle Stock by Age Class								
	Estimated Population of Vehicle by Age					Estimated Registration Distribution -- Vehicles over 10 years old		
Fiscal Year	0 to 4 Years	5 to 10 Years	Over 10 Years	All	Percent Change	Annual Permanent Registrations	Cumulative Permanent Registrations Since FY 2007	Annual Registrations Vehicles over 10 Years Old
A 2013	1[illegible]9,692	34[illegible]2,350	83[illegible]9,534	1,576	-1.2%	45,361	211,492	349,534
A 2014	1[illegible]9,458	35[illegible]0,893	83[illegible]0,623	0,974	-0.1%	48,344	249,929	350,623
A 2015	2[illegible]8,938	35[illegible]0,515	83[illegible]0,717	0,170	-0.1%	54,586	292,806	350,717
A 2016	2[illegible]4,217	35[illegible]3,540	8[illegible]2,492	30,249	0.0%	55,597	334,686	352,492
F 2017	**2[illegible]4,787**	**35[illegible]5,637**	**8[illegible]8,165**	**38,588**	**1.0%**	**56,627**	**375,634**	**358,165**
F 2018	**2[illegible]8,801**	**36[illegible]0,706**	**8[illegible]2,828**	**52,334**	**1.6%**	**57,676**	**415,712**	**362,828**
F 2019	**2[illegible]6,681**	**36[illegible]7,880**	**8[illegible]6,455**	**71,015**	**2.2%**	**58,744**	**454,981**	**366,455**

Step 2. Annual Registration Revenue

Multiply the estimated population of each age cohort by its respective registration fee. Table 4 presents the estimated revenue from light vehicle registrations by age class. Revenue from new cohort registrations is projected to rise steadily due to stable growth in vehicle sales. The declining population of the mid cohort results in lower revenue collections from that group in each of the three years in the forecast period. Slight but steady growth in the number of old cohort vehicles results in higher revenue for that age class. Total light vehicle annual registration revenue rises from $80.5 million in FY 2016 to $88.8 million in FY 2019, an average annual growth rate of 3.3%.

Table 4
Estimate of Light Motor Vehicle Registration Revenue by Age Class
($ millions)

Fiscal Year	0 to 4 Years $217 Fee	5 to 10 Years $87 Fee	Over 10 Years $28 Fee	Annual Light Vehicle Revenue
A 2013	$38.993	$26.304	$9.787	$75.085
A 2014	$41.112	$25.308	$9.817	$76.238
A 2015	$45.340	$23.535	$9.820	$78.694
A 2016	$48.655	$22.058	$9.870	$80.583
F 2017	**$50.949**	**$21.370**	**$10.029**	**$82.348**
F 2018	**$53.990**	**$20.941**	**$10.159**	**$85.090**
F 2019	**$57.870**	**$20.696**	**$10.261**	**$88.826**

Step 3. Other Vehicle Registrations and Fees

Additional motor vehicle revenue comes from registrations other than those for light vehicles (motor homes, large vehicles, etc.), as well as from licensing, plating, titling, and other fees. The other registration and fee revenue categories are expected to grow at the same rate as annual light vehicle registration revenue over the forecast period. The information is summarized in Table 5. This method maintains the relative share each revenue category represents of total motor vehicle revenue collections net of permanent registration revenue.

Table 5 Total Vehicle Revenue Net of Permanent Registrations ($ millions)								
Fiscal Year	Light Vehicle Revenue	Percent Change	Other Vehicle Registration Revenue	Percent Change	All Other Fees	Percent Change	Total (Before Permanent Registrations)	Percent Change
A 2013	$75.585	-1.7%	$13.413	-2.9%	$5.684	2.6%	$94.683	-1.6%
A 2014	$76.533	1.3%	$13.668	1.9%	$6.029	6.1%	$96.230	1.6%
A 2015	$78.982	3.2%	$14.449	5.7%	$7.602	26.1%	$101.033	5.0%
A 2016	$81.361	3.0%	$14.321	-0.9%	$7.299	-4.0%	$102.982	1.9%
F 2017	**$82.348**	**1.2%**	**$14.495**	**1.2%**	**$7.387**	**1.2%**	**$104.230**	**1.2%**
F 2018	**$85.090**	**3.3%**	**$14.978**	**3.3%**	**$7.634**	**3.3%**	**$107.702**	**3.3%**
F 2019	**$88.826**	**4.4%**	**$15.635**	**4.4%**	**$7.969**	**4.4%**	**$112.430**	**4.4%**

Step 4. Combine All Estimates

Permanent registration revenue is combined with all other vehicle taxes and fees revenue to determine total motor vehicle revenue. The results are presented in Table 6. Total revenue is expected to increase throughout the forecast period, as the effects of the recession fade away and new vehicle sales continue to track upward.

Table 6 All Vehicle Taxes and Fees Revenue ($ millions)				
Fiscal Year	Total Collections Net of Permanent Registrations	Permanent Registration Estimate	Total Revenue	Percent Change
A 2013	$95.185	$3.960	$99.144	-0.6%
A 2014	$96.748	$4.220	$100.968	1.8%
A 2015	$101.609	$4.772	$106.381	5.4%
A 2016	$103.623	$4.856	$108.479	2.0%
F 2017	**$104.200**	**$5.000**	**$109.200**	**0.7%**
F 2018	**$107.700**	**$5.000**	**$112.700**	**3.2%**
F 2019	**$112.400**	**$5.100**	**$117.500**	**4.3%**

Data Sources

Tax revenue data are from SABHRS. Detailed Montana vehicle registration data are provided by the Department of Justice Motor Vehicle Division.

Revenue Description

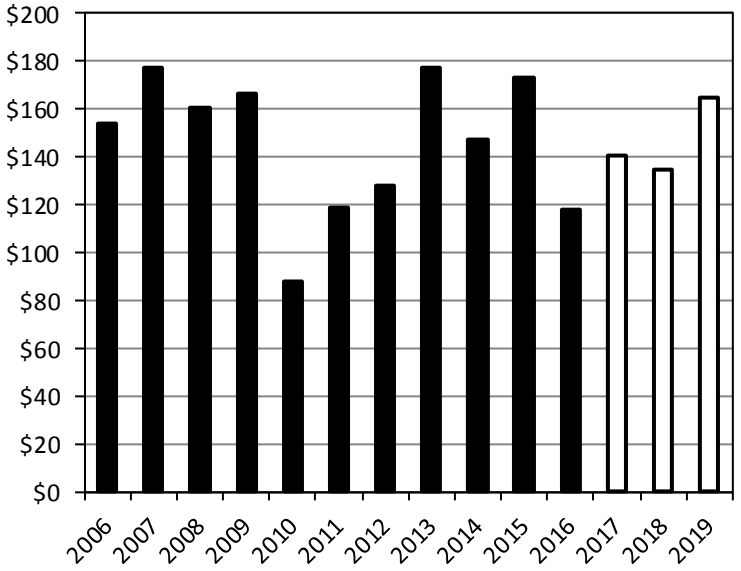
Montana imposes a corporation income tax on net corporate profits apportioned to Montana in accordance with 15-31-121, MCA. The tax is levied at a flat rate of 6.75% of net income; however, corporations making a "water's edge" election to exclude overseas net profits, are taxed at 7%. Since FY 2006, revenues have been deposited 100% in the general fund.

Corporations expecting to have tax liability of at least $5,000 are required to make quarterly estimated payments. Returns are due five months after the end of the corporate fiscal year, but a corporation may elect to take an automatic six-month extension. The Department of Revenue may grant additional extensions. Corporations taking an extension and expecting to have tax liability greater than their estimated payments generally make a tentative payment when their return is due. There is a minimum corporation tax of $50 per year, the overwhelming majority of the approximately 16,500 "C-Corps" registered to do business in Montana pay the minimum tax.

Table 1 shows general fund revenue from corporation income taxes for FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019.

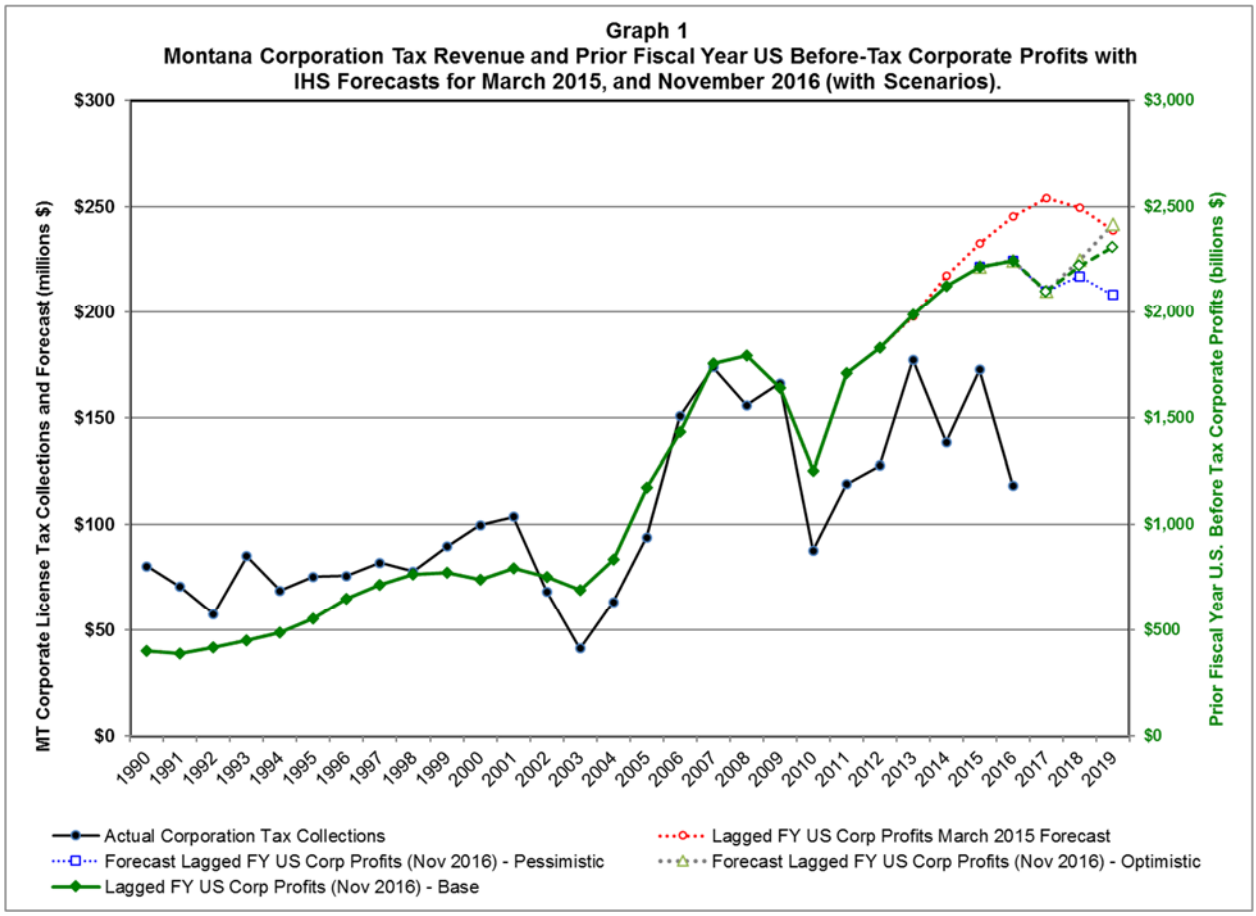
Table 1
Corporation Income Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$153.675	56.47%
A	2007	$177.504	15.51%
A	2008	$160.342	-9.67%
A	2009	$166.355	3.75%
A	2010	$87.901	-47.16%
A	2011	$119.044	35.43%
A	2012	$127.771	7.33%
A	2013	$177.497	38.92%
A	2014	$147.548	-16.87%
A	2015	$172.729	17.07%
A	2016	$118.387	-31.46%
F	**2017**	**$140.308**	**18.52%**
F	**2018**	**$134.346**	**-4.25%**
F	**2019**	**$164.575**	**22.50%**



Corporate tax revenue fell by more than 47% in FY 2010. This reflects the sharp decline in corporate profits from 2007 peak to 2009 trough, a result of the "Great Recession". Collections recovered in FY 2011 through FY 2013. Volatility in FY 2014 through FY 2016 appears to reflect commodity price and federal tax policy changes.

Graph 1 presents the relationship between US corporate profits which underpins the more detailed econometric model (which accounts for auto-correlation bias and lagged variables) used to produce the Montana corporate tax revenue estimate. Actual Montana corporate tax collections (note round markers) are presented on the left axis in millions of dollars, and US corporate profits (line with solid diamond markers), the IHS Markit, March 2015, profits forecast (dotted line with hollow round markers), November 2016 baseline projections (dashed line and hollow diamond markers) in billions of dollars. The March 2015 forecast is presented to show the shift in the forecast over time. The IHS Markit, November 2016, optimistic (dotted line and hollow triangles) and pessimistic (dots with hollow squares) scenarios are also presented.



Actual corporate profits grew through FY 2015 (lagged FY 2016), but not as rapidly as anticipated, creating a disconnect in the relationship between US corporate profits and Montana collections. It appears that the timing effects of multiple extensions, expansions, and retroactive changes to business bonus depreciation and expensing provisions has led to much of the unanticipated change in collections during both the 2015 and the 2017 biennia.

The *American Taxpayer Relief Act of 2012* (ATRA) P.L. 112-240, passed as part of the "fiscal cliff" deal on January 2, 2013, appears to have affected the 2015 biennia collections. The *Protecting Americans from Tax Hikes Act of 2015* (PATH), P.L. 114-113, passed in December 2015, has affected the 2017 Biennia collections. Bonus depreciation has been extended under PATH through CY 2019 (CY 2020 for certain long-production period property). These were originally set to expire in CY 2014. PATH also expanded Section 179 business cost expensing. With each round of tax changes these tax benefits have become more extensive than prior law. The law changes effectively broadened applicability of tax advantages retroactively on several occasions over the last 15 years. The more recent changes are likely to have contributed to the overpayments in FY 2015, compared to forecast, as adjustments to the law change were delayed. What followed in FY 2016 appears to be a significant adjustment for overpayments in FY 2015, and the retroactive extension of tax benefits at the end of CY 2015. The increase in FY 2015 was correctly identified last session, but the extension of PATH tax provisions and losses related to overshooting of oilfield investments led to a repeat of the FY 2014 collections decline in FY 2016. FY 2015 collections were also boosted by business reorganizations that resulted in large "audit" collections.

While Corporate profit growth reversed in CY 2015, they are expected to rise slowly in FY 2017 and accelerate. Recent losses, and the use of bonus deprecation rules will mute the tax revenue recovery. The federal tax policy environment is somewhat more certain as accelerated depreciation rules do not expire until CY 2020 and the Section 179 rules have been made permanent law.

Risks and Significant Factors

- Corporate tax revenue is highly correlated with the profitability of corporations doing business in the United States.

- The variation in corporate tax revenue can be much greater than that of corporate profits as Montana allows:
  - Firms to carry forward losses from up to seven years in the past and offset current taxable income.
  - Corporations may amend returns (back three years) and use current losses to offset past taxes.
  - Business structures and tax treatment of expenditures and income may change.
- A series of federal changes to expensing and depreciation rules have introduced additional variation in state annual revenue collections beginning in CY 2002. These changes have been temporary law, often with retroactive applicability (and now interacting changes):
  - *The Job Creation and Worker Assistance Act of 2002* allowed 30% depreciation between September 10, 2001, and May 5, 2003.
  - The *Jobs and Growth Tax Relief Reconciliation Act of 2003* allowed for 50% depreciation between May 6, 2003, and December 31, 2004.
  - In 2008, the Bush Administration's *Economic Stimulus Act of 2008* reinstituted 50% depreciation for CY 2008.
  - Under the *American Recovery and Reinvestment Act of 2009,* 50% depreciation was extended for CY 2009.
  - *Small Business Jobs Act of 2010*, 50% bonus depreciation was extended through CY 2012.
  - The *Tax Relief, Unemployment Insurance Reauthorization of 2010* provided for 100% expensing for most property put in service before the end of CY 2011.
  - *The Job Creation Act of 2010* extended 50% depreciation for certain "long-production period" property through CY 2013 and 100% expensing was allowed if the property was placed in service by the end of CY 2012.
  - Under *The American Taxpayer Relief Act of 2012,* the provisions of the two 2010 Acts were expanded and extended through CY 2013 for most property and through CY 2014 for "long-production period" property.
  - The *Tax Increase Prevention Act of 2014* extended ATRA through 2014 and expanded the options for applying alternative minimum tax credits for firms that opted out of bonus depreciation.
  - *Protecting Americans from Tax Hikes Act of 2015* in December 2015 made the previously temporary expansion of Section 179 expensing limits permanent, extended 50% bonus depreciation through 2017, phased bonus depreciation down to 40% in 2018, and 30% in 2019 before expiring in CY 2020.
- These temporary changes in accounting rules shift taxes into later years. The expiration of special depreciation is not expected to generate additional revenue in the forecast period.
- Corporations may reorganize their business structures which can have significant effects on the level and allocation of tax receipts. As an example, a change in business ownership in TY 2012 led to a one-time increase in corporation tax revenue in FY 2013. More recently, a major pipeline and energy firm consolidated and changed back into a C-Corp. structure. These changes tend to shift collections between corporation tax and individual income tax. The implications for Montana are difficult to establish in advance as Montana's total collections from these business structures are dependent on the Montana apportionment factors for corporations and the residency status for individuals and (pass-through) entities receiving partnership distributions or dividends may have different incidence.
- Other risks to the forecast could include:
  - a federal decision to make bonus depreciation permanent. Such a change would likely reduce corporation income tax collections in the years immediately following the change.
  - Preferential tax treatment for repatriated profits could increase Montana tax collections to the extent that these are distributed based on the standard apportionment formulas.
- In recent years there have been approximately 16,800 companies that filed corporate income forms in Montana. The top 100 filers had 69% of the total tax liability. If one of these top tax-filing companies has significantly more (or less) tax liability than expected, it could have a significant impact on collections.
- The true stock of carry-forward losses is not known. Therefore, the extent that firms are able to use these losses to offset recent profits is also not wellknown. Greater than normal historical use of these accumulated losses may lower corporation tax collections.

The various waves of significant tax policy changes and volatility in commodity prices have added yet more unpredictability into the already volatile corporation tax estimate. With multiple back-to-back retroactive law changes, it appears that there is now an amplification of the interaction of net operating loss carry-forward offsets to current year taxable profits, amended return claw back of prior year tax payments, and rounds of investments that have received bonus depreciation tax advantages. It is important to recognize that accelerated depreciation does not eliminate or reduce tax liability; rather the liability is shifted into the future.

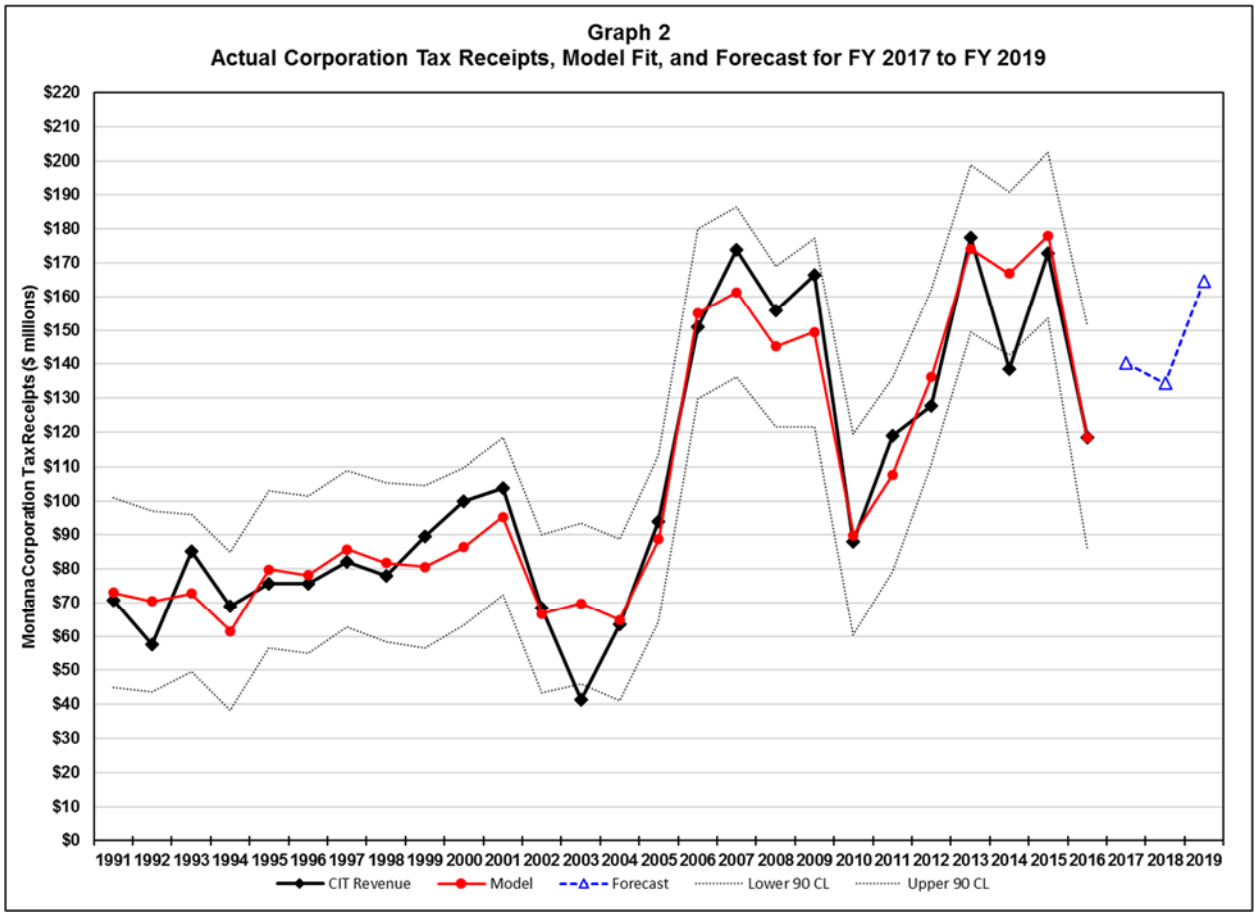
Forecast Methodology

Step 1. Total corporate license tax collections, (including both general fund and non-general fund revenues) for FY 1990 through FY 2016 were regressed against the prior two fiscal years of national corporate profits (before taxes), the accelerated bonus depreciation rate, and the fiscal year average price of oil. This produces an estimate of the relationship between Montana corporation income tax collections and US corporate profits. The model was tested for serial autocorrelation bias and lagged variable bias. While the fit and power of the model was compared for the pre-FY 1990 and post-FY 1990 periods, they were found to be very similar, an analysis of the relationship between worldwide and domestic US corporate profits pointed to a shift in this relationship between 1985 and 1990. While the time series starting in 1969 could have been used, in order to not over-specify the model, the observations for 1969 to 1990 were eliminated. This widened the confidence interval of the forecast but produced good projected FY 2015 and FY 2016 estimates when the model was test by eliminating the FY 2015 and FY 2016 actuals. The selected model projected those values well (it under-projected the two-year actual total by $7.3 million). The model produces a root mean square error of $12.9 million and a mean absolute percent error of 8.4%. (The square root of the mean squared error assigns more weight to large model estimate errors regardless of sign, and mean absolute error weighs error equality, regardless of sign). The model R2 is 0.9223.

Other models were considered, including the use of West Texas Intermediate (WTI) oil prices alone, the addition of indicator variables to account for the last minute tax changes. An important finding of this work was that US corporate profits and oil prices are highly correlated. For more recent periods the simple relationship with corporation tax revenue has weakened for both corporate profits and oil prices. This weakening in the relationship is slightly more pronounced for corporate profits. This is not surprising given the changes in federal tax policy, the growing importance of oil related activities since the development of the Elm Coulee oil field in Montana, and the recent drop in oil prices. The indicator variables for much lower than anticipated collections in FY 2003 and FY 2014 were tested, but rejected because that model produced forecasts that were deemed too high.

Step 2. The model parameters were then used with the IHS Markit (base) forecast of corporation before tax profits and the WTI oil price to project tax revenue. It also bears mentioning that lagged FY 2017 (FY 2016 actuals) US corporate profits are essentially known. The tax strategies of US corporations that do business in Montana are unknown, but assumed to comport with period averages. The model implicitly assumes period average historical economic sector weights and tax liability with respect to the US national economic sector profits; as such, the model does implicitly consider the typical economic sector deployment of Montana corporations. The FY WTI price variable was added to try to account for input price volatility on oil manufacturing profits in Montana, it is assumed that changes in oil prices have near-term effects on corporation estimated payments.

Graph 2 shows actual collections compared to the model estimates of corporation tax collections. The graph includes the upper and lower 90% model confidence intervals. The intervals while not true forecast intervals were included to help indicate the likely range of the most probable outcomes. The model fits the past well given the volatility of these revenues and the successive rounds of federal tax policy changes.



Distribution

100% of the corporation tax revenue collected is distributed to the general fund.

Data Sources

Collections data were obtained from SABHRS. Revenues prior to FY 1993 are from LFD historical records, and U S corporation profits and forecasts are from the March 2015 and November 2016, IHS Markit forecasts. The Department of Revenue provided the corporation tax annual master files through the latest available dataset (TY 2014).

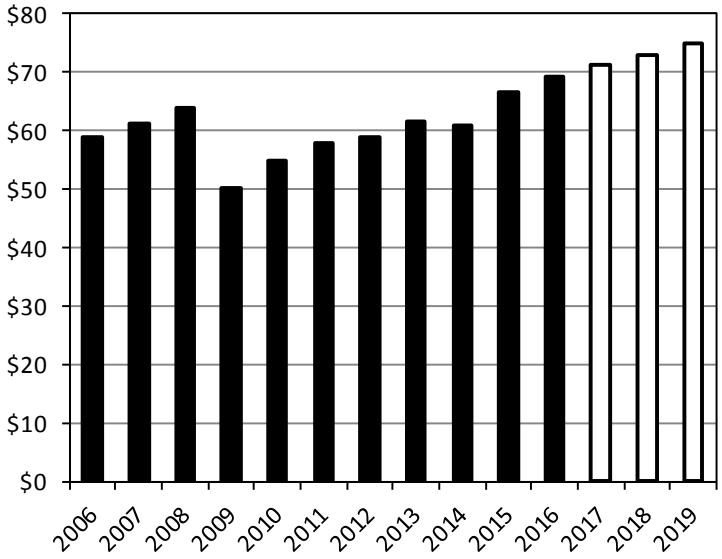
Revenue Description

Per 33-2-705, MCA, Montana levies a tax of 2.75% on net premiums on all insurance policies except those issued by health service corporations (HSCs). HSCs are exempt from all premium taxes under 33-30-203, MCA. An additional surcharge of 2.5% on premiums is collected for fire and casualty insurance on property (50-3-109, MCA). There is also a premium insurance tax for captive insurance companies levied under 33-28-201, MCA. Starting in November 2008, Initiative 155 transfers 33% of insurance premium taxes collected (under 33-2-705, MCA) to a state special revenue fund for the Healthy Montana Kids Plan Act (53-4-1101, MCA). HB 676 of the 2009 Session reduced the transfer to 16.67% for the 2011 and 2013 biennia, but the transfer returned to 33% for the 2015 biennium and beyond. The State Auditor's Office (SAO) administers the collection of these taxes.

Table 1 presents the actual general fund receipts from insurance premium taxes for FY 2006 through FY 2016 as well as the forecast for FY 2017 through FY 2019.

Table 1
Insurance Premiums Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$58.795	2.59%
A	2007	$61.074	3.88%
A	2008	$64.004	4.80%
A	2009	$50.038	-21.82%
A	2010	$54.892	9.70%
A	2011	$57.964	5.59%
A	2012	$58.951	1.70%
A	2013	$61.678	4.63%
A	2014	$60.873	-1.31%
A	2015	$66.582	9.38%
A	2016	$69.255	4.01%
F	**2017**	**$71.102**	**2.67%**
F	**2018**	**$72.951**	**2.60%**
F	**2019**	**$74.800**	**2.53%**



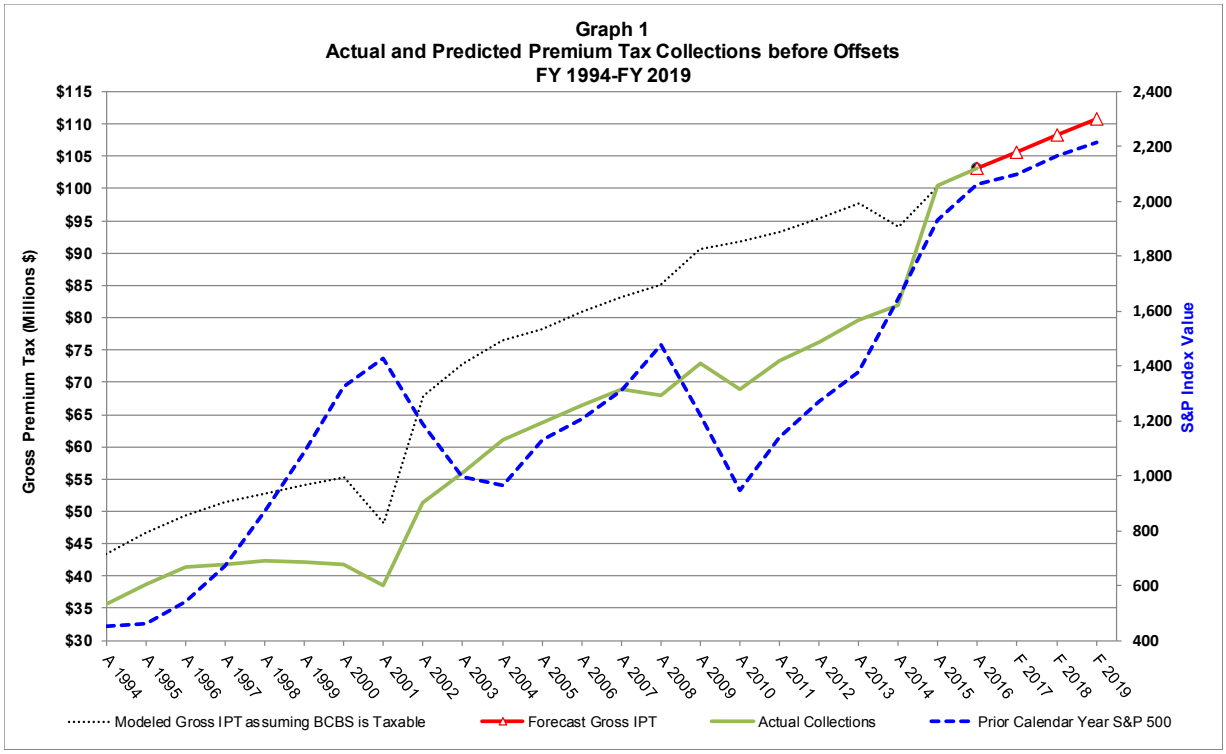
Risks and Significant Factors

- In August 2013, Health Care Services Corporation (HCSC) purchased Blue Cross Blue Shield of Montana (BCBS). As a result of the merger, premiums paid to BCBS are now taxable. As BCBS market share changes, so will taxable insurance premium.
- Beginning January 1, 2014, the individual mandate of the Affordable Care Act (ACA) became effective. As not all insurance plans are currently taxable, any changes in the tax liability of individual health plans available on the healthcare exchange will have an impact on tax collections.
- The Montana HELP Act, passed during the 2015 Legislature, expanded Medicaid effective January 2016. The HELP Act contributed to the decrease in the uninsured rate in Montana, however, the fees paid to the third-party-administrator by HELP members are not taxable.
- Financial or other turmoil raises insurer's costs; slow wage growth may reduce insurance purchases.
- Revenues may be reduced if consumers choose insurance coverage provided by non-taxable or public plans.

- Premium tax collections tend to move counter cyclically with financial markets as companies collect premiums from policy holders and pay claims from premiums and investment earnings. When investment earnings are high, insurance companies can reduce premiums charged to clients.
- Accounting changes in the past have masked underlying real consumer behavior and tax collections.

Forecast Methodology

Step 1. Insurance premium taxes forecast. Insurance premiums taxes, before offsets, are projected from a model of the relationship of insurance premium tax collections with respect to the average Standard and Poor's 500 stock index value for the prior calendar year. The effect of modeling FY 1994 through FY 2016 is presented in Graph 1. With its sale to HCSC in 2014, BCBS premiums became taxable. Over three years later, the model is able to take into account two complete fiscal years of taxable BCBS premium collections. A portion of the model error in recent years may be due to the refund of insurance company credit carryover balances. Because of this, the forecast is based on the model as the effective "actuals" are distorted by these after-the-fact refunds.



Step 2. Calculate insurance tax bases for distributions. Captive insurance company premiums taxes, yearly insurance premium taxes, and surplus lines taxes need to be estimated and excluded from insurance premium taxes that are the base for distributions to the Healthy Montana Kids fund. This also allows for the calculation of captive insurance company insurance premium taxes that are directed to the captive insurance company administration fund.

Captive insurance companies are regulated under Title 33, Chapter 28, of the Montana Code, (SB 373 of the 2001 Legislature). Captive insurance firms pay tax on premiums collected under 33-28-201, MCA, and were recorded in the same account as premium taxes collected under 33-2-705, MCA, until FY 2010. The 2007 Legislature, through SB 161, reserved five percent (5%) of the tax paid by captive insurance companies for the oversight of captive insurance companies. HB 160 of the 2009 Session, reduced the number of tax rate bands from four to two (with no revenue effects) and allowed for quarterly proration of initial year fees. In FY 2014, nearly $1,708,000 in premium taxes were collected from captive insurance companies and nearly $85,000 was directed to the state special revenue account for supervising captive insurance companies. Premium tax collections from captive insurance companies represent a small but rapidly growing fraction of total insurance premiums tax collections.

In FY 2011, there was a federal change in the allocation of some surplus lines premiums taxes from a multi-state distribution formula to a formula more heavily weighted by the domicile of the insurance company collecting surplus lines premiums. SB 331 (the 2011 Session) restored the allocation of surplus lines taxes to the historical practice.

Step 3. Calculate fire surtax. The Fire Marshal surtax on fire and casualty insurance is projected using the growth in total estimated insurance base. Table 2 lists the actual fire/casualty (or Fire Marshall tax) and forecast collections. Surtax collections represented 6.1% of gross insurance premiums taxes in FY 2016.

Step 4. Calculate insurance licenses and permits revenue. Revenue from insurance licenses and permits represented 5.1% of gross insurance premiums taxes in FY 2016, and this percentage is held constant during the forecast period.

Step 5. Total the estimates. Total general fund insurance premiums tax revenue (net of offsets and I-155 distributions), fire/casualty insurance surtax, and licenses and permits fees are summed to determine the estimate of insurance premiums tax collections for FY 2017, FY 2018, and FY 2019.

Distribution

- Distributions to the general fund, Healthy Montana Kids fund, SAO Insurance Operations, and the Captive Insurance fund are presented in Table 2.

Table 2
Distribution of Insurance Taxes by Type and Fund
($ millions)

Tax/Fund	Fund	FY 2016	FY 2017	FY 2018	FY 2019
Captive Premium Tax		***$1.708***	***$1.972***	***$2.235***	***$2.498***
General Fund (95%)	01100	*$1.623*	*$1.873*	*$2.123*	*$2.373*
Captive Insurance Operations (5%)	02528	*$0.085*	*$0.099*	*$0.112*	*$0.125*
Other Insurance Taxes		**$4.903**	**$5.017**	**$5.143**	**$5.269**
Retaliation Tax	02235	$0.335	$0.225	$0.225	$0.225
Insurance Licenses & Permits		**$4.568**	**$4.792**	**$4.918**	**$5.044**
Of which:					
General Fund (est. 0.66%)	01100	*$0.029*	*$0.031*	*$0.032*	*$0.033*
SAO Insurance Operations (est. 97.82%)	02235	*$4.465*	*$4.687*	*$4.811*	*$4.934*
Captive Insurance Operations (est. 1.52%)	02528	*$0.075*	*$0.073*	*$0.075*	*$0.077*
Insurance Taxes and Offsets		***$9.353***	***$9.570***	***$9.810***	***$10.051***
Fire & Casualty Surtax (GF)	01100	$6.276	$6.421	$6.583	$6.744
MLHIGA & MCHA Offsets/[Credits]	Credit	$0.000	$0.000	$0.000	$0.000
Surplus Lines Tax	01100	$2.922	$2.989	$3.065	$3.140
Insurance Premium Tax - Yearly (GF)	01100	$0.156	$0.159	$0.163	$0.167
I-155 Premium Insurance Tax		**$87.200**	**$88.997**	**$91.022**	**$93.048**
Healthy Montana Kids Fund (16.67% / 33%)	02597	$28.950	29.369	30.037	30.706
General Fund (83.33% / 67%)	01100	$58.250	59.628	60.985	62.342
Gross Insurance Taxes, Licenses, & Fees	All Funds	**$103.164**	**$105.554**	**$108.211**	**$110.867**

Fund Distribution of All Insurance Taxes, Licenses and Fees

Fund	Fund	FY 2016	FY 2017	FY 2018	FY 2019
General Fund	01100	$69.255	$71.102	$72.951	$74.800
SAO Insurance Operations	02235	$4.799	$4.912	$5.036	$5.159
Captive Insurance Operations	02528	$0.160	$0.171	$0.186	$0.202
Healthy Montana Kids Fund	02597	$28.950	$29.369	$30.037	$30.706
MLHIGA & MCHA Offsets/[Credits]	Credit	$0.000	$0.000	$0.000	$0.000
Gross Insurance Taxes, Licenses, & Fees	All Funds	**$103.164**	**$105.554**	**$108.211**	**$110.867**

Data Sources

Tax collections are from SABHRS. The Insurance Division of the State Auditor's Office provided historical data on offsets and estimates of future offsets. The Standard & Poor's 500 stock index is from IHS Markit, October 2016, forecast.

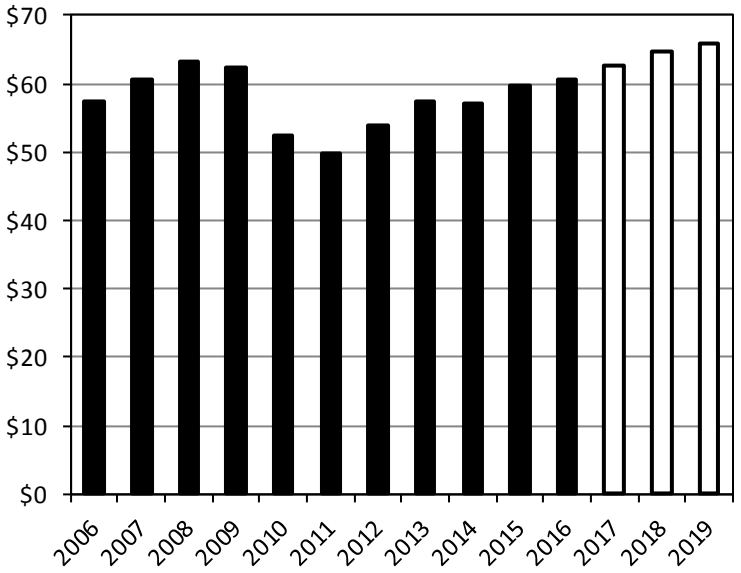
Revenue Description

In accordance with 23-5-610, MCA, a 15% tax is imposed on the gross machine income received from video gambling machines in the state of Montana. Allowable video gambling machines in Montana consist of bingo, keno, poker, line games, and multigame terminals. Gross machine income is the difference between total receipts from a machine and cash payouts. All video gambling tax collections are deposited in the general fund.

Table 1 shows actual video gambling revenue to the general fund for FY 2006 through FY 2016 and projected revenue for FY 2017 through FY 2019.

Table 1
Video Gambling Tax
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$57.277	7.34%
A 2007	$60.641	5.87%
A 2008	$63.134	4.11%
A 2009	$62.458	-1.07%
A 2010	$52.396	-16.11%
A 2011	$49.824	-4.91%
A 2012	$53.824	8.03%
A 2013	$57.261	6.39%
A 2014	$57.147	-0.20%
A 2015	$59.799	4.64%
A 2016	$60.554	1.26%
F 2017	**$62.522**	**3.25%**
F 2018	**$64.546**	**3.24%**
F 2019	**$65.801**	**1.94%**



In FY 2016, general fund revenue from video gambling surpassed $60 million for the first time since FY 2009. Quarterly machine income averaged slightly over $100 million during FY 2016 with an average of over 14,000 machines in operation.

Video gambling revenue grew steadily from FY 2006 through FY 2008 before declining in FY 2009, FY 2010, and FY 2011. The Great Recession had a significant effect on video gambling spending in Montana. The share of Montana nominal disposable income spent on video gambling fell sharply during FY 2010. Prior to FY 2010, from FY 1999 through FY 2009, video gambling expenditures (represented by nominal machine income) accounted for slightly over 1.4% of disposable income. In the six years since FY 2010, spending on video gambling has averaged less than 1.1% of disposable income. The shock of the Great Recession created a shift in consumer spending patterns in Montana that led to a reduced allocation of income to video gambling. Nominal machine income is slowly climbing back to levels recorded before the downturn in collections, but in real terms the wedge between current machine income and its peak level during the period from FY 1999 through FY 2016 is nearly $20 million. Continued growth in Montana disposable income is expected to pull video gambling collections higher. For FY 2017 through FY 2019, general fund tax revenue from video gambling is forecast to grow at an average rate of 2.8%.

Table 2 shows actual Montana disposable income, video gambling machine income, the ratio of machine income to disposable income, and general fund tax revenue for FY 2006 through FY 2016, with estimates for FY 2017 though FY 2019.

Table 2 Video Gambling Trends ($ millions)								
	Fiscal Year	Montana Disposable Income		Machine Income		% of Disp. Income	Tax Revenue
A	2006	$25,943.631	÷	$379.416	=	1.46%	$57.277
A	2007	$27,704.383	÷	$405.073	=	1.46%	$60.659
A	2008	$29,735.405	÷	$422.829	=	1.42%	$63.134
A	2009	$30,191.750	÷	$413.771	=	1.37%	$62.458
A	2010	$30,593.165	÷	$349.260	=	1.14%	$52.396
A	2011	$32,275.685	÷	$329.559	=	1.02%	$49.824
A	2012	$34,292.396	÷	$358.219	=	1.04%	$53.824
A	2013	$35,429.535	÷	$380.330	=	1.07%	$57.261
A	2014	$35,639.194	÷	$385.483	=	1.08%	$57.147
A	2015	$37,041.784	÷	$398.657	=	1.08%	$59.799
A	2016	$38,076.425	÷	$403.692	=	1.06%	$60.554
F	**2017**	**$39,603.931**	**÷**	**$416.814**	**=**	**1.05%**	**$62.522**
F	**2018**	**$41,518.153**	**÷**	**$430.309**	**=**	**1.04%**	**$64.546**
F	**2019**	**$43,658.730**	**÷**	**$444.691**	**=**	**1.02%**	**$65.801**

Policy changes have also impacted video gambling collections over the years. At the state level, full implementation of the Montana Clean Indoor Air Act occurred on October 1, 2009. This law required casinos and bars to enforce a no-smoking policy. This indoor smoking ban may have exacerbated the decline in video gambling revenue that occurred in FY 2010 and FY 2011. Slightly negative growth from FY 2013 to FY 2014 may be partially explained by the enactment of the federal American Taxpayer Relief Act (ATRA), which took effect on January 2, 2013. The act eliminated the reduced payroll tax rates that were put in place in 2011 and 2012 as a result of Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010. This increase in payroll taxes shaved some growth off income in 2013 which affected video gambling collections in FY 2014.

The changing age structure of the Montana population has implications for the future of video gambling expenditures. The US Bureau of Labor Statistics Consumer Expenditure Survey contains information about consumer spending on entertainment goods and services, which encompasses video gambling. At the national level, the proportion of income spent on entertainment goods and services is highest among individuals aged 65 to 74 years old. In 2014, the most recent data available, individuals in this age group spent over a full percentage point more of their after-tax income on entertainment than those the next closest age group. Interestingly, historical data on income and entertainment spending suggest that it might not simply be the age group itself, but rather the specific cohort of people currently in the 65 to 74 year age group who exhibit a relatively higher propensity to engage in entertainment spending. This implies that entertainment spending preferences may be largely determined by the generation an individual is a part of rather than their current age. In Montana, people over 65 years of age currently represent the largest segment of the state's total population. Assuming national trends in entertainment spending are indicative of trends in Montana video gambling expenditures, the largest age group in Montana is currently comprised of a generation of individuals who dedicate a higher share of their income to video gambling than any other group of people. As this generation of individuals shrinks, the average propensity to spend on video gambling of the largest age group in Montana will start to decline. The 65 and older age group is expected to continue to be the largest age group for many years to come, but the changing tastes and preferences of the individuals who make up that age group will influence the future path of video gambling receipts.

Risks and Significant Factors

- Video gaming revenue is impacted by the level of income in Montana as well as the share of income that individuals spend at video gambling terminals.
- Broad growth in economic activity has a positive impact on video gambling expenditures. Employment and wage gains increase the pool of individuals willing to spend money at video gambling establishments.
- Changing age demographics in Montana will influence video gambling tax revenue going forward as shifts occur in the tastes and preferences of the Montana population.

Forecast Methodology

Video gambling revenue is forecast using a multiple linear regression model. The model uses quarterly data, and video gambling receipts are regressed on a collection of independent variables. These independent variables include Montana disposable income and dummy variables to account for changes in legislation and economic impacts.

Disposable income is income leftover after the payment of taxes. It is assumed to be a good representation of an individual's spending money, which influences an individual's willingness to pay for video gambling. Before being input into the model, the income data are transformed with the natural log function. The natural log transformation straightens out the raw income data, allowing for better estimation using the linear regression model. Dummy variables are added to account for the economic recession and the implementation of the smoking ban from the Montana Clean Indoor Air Act.

The regression model produces coefficient estimates for the effect of income, economic recession, and the smoking ban on video gambling revenue. Each of these coefficient estimates is statistically significant with the expected sign (i.e., the direction of the impact on gambling receipts). Income has a positive effect on video gambling revenue, while the recession and the smoking ban contribute negatively to receipts.

By multiplying the estimated regression coefficients against forecast values of the independent variables, future estimates of quarterly video gambling revenue are obtained for FY 2017, FY 2018, and FY 2019. These quarterly forecasts are summed to produce annual estimated video gambling revenue for the forecast period.

Distribution

All of the revenue collected from the video gambling tax is distributed to the general fund.

Data Sources

Historic video gambling revenues were obtained from SABHRS and the Department of Justice. Historical and forecast values for Montana income were obtained from IHS Markit.

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

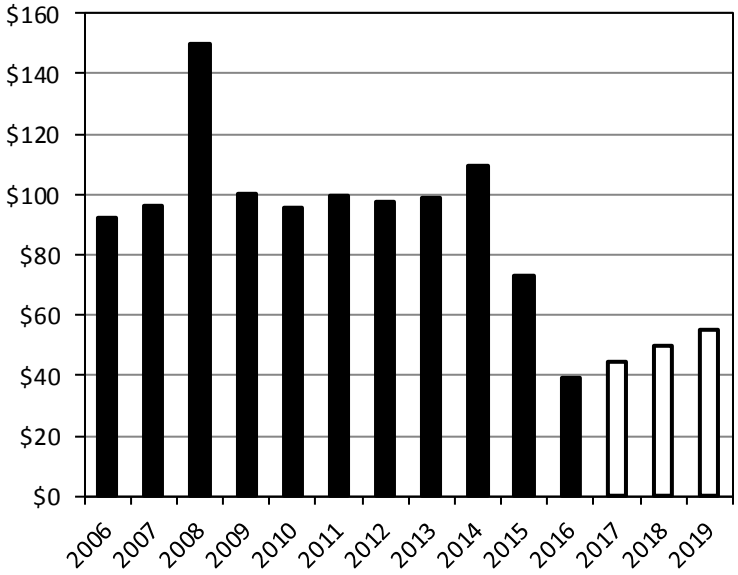
Revenue Description

In accordance with 15-36-304, MCA, Montana taxes the gross value of oil and natural gas production. The tax rates vary depending on the resource being extracted, the method of production, the age of the well, and the resource price. Working interest owners who incur the costs of production pay lower tax rates than parties that receive royalty payments from production of the oil and/or natural gas. Revenues are distributed to a variety of state and local government funds. Since FY 2006, oil and natural gas production tax deposits to the general fund have averaged 46% of total production tax collections.

Table 1 shows actual general fund revenue from the oil and natural gas production tax for FY 2006 through FY 2016 and projected revenues for FY 2017 through FY 2019.

Table 1
Oil and Gas Production Taxes
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$92.563	47.80%
A	2007	$96.335	4.08%
A	2008	$149.994	55.70%
A	2009	$100.491	-33.00%
A	2010	$95.491	-4.98%
A	2011	$99.764	4.47%
A	2012	$97.560	-2.21%
A	2013	$98.683	1.15%
A	2014	$109.606	11.07%
A	2015	$73.184	-33.23%
A	2016	$39.083	-46.60%
F	**2017**	**$44.821**	**14.68%**
F	**2018**	**$49.533**	**10.51%**
F	**2019**	**$54.875**	**10.79%**



The onset of horizontal drilling and the discovery of the Elm Coulee field in the Bakken shale formation in 2000 sparked a resurgence in Montana's oil industry, which led to increased oil and natural gas production tax revenue. The boom contributed to nine years of general fund oil and natural gas tax revenue above $90 million from FY 2006 - FY 2014. Record collections occurred in FY 2008 due to strong production and exceptionally high oil and natural gas prices. FY 2009 revenue decreased significantly as prices came crashing back down. General fund revenue was relatively stable from FY 2010 - FY 2013, before experiencing another slight surge in FY 2014. Oil and natural gas prices started to decline in the summer of 2014 and continued to fall rapidly into the winter of 2015, shedding over 50% in value during that time. The steep decline in prices reduced the gross value of oil and natural gas production in Montana, which heavily impacted production tax revenue beginning in FY 2015. Prices ticked back up in the spring of 2015, before turning back down and falling to fresh lows in the winter of 2016. The full effect of the bust was apparent in FY 2016 production tax collections, as revenue fell 46% from FY 2015, and reached the lowest level since FY 1999. The incidence of such low prices brought drilling in Montana to a halt. Prices have yet to rise enough to spur renewed drilling activity. Both oil and natural gas production continue to suffer in the absence of new drilling. Prices - particularly for oil - have recovered from the lows in early 2016, and are projected to remain high enough to contribute to a return to growth in production tax collections over the forecast period. The gradual rise in prices, however, is mitigated by the persistence of subdued oil and natural gas production.

The production tax rates applicable for working and royalty ownership interests of a well, as established in 15-36-304, MCA, are outlined in Table 2. The production tax rates in the table reflect the statutory percentages. In addition, the combined tax rates that include the Board of Oil and Gas Conservation (BOGC) privilege and license tax (0.09%) and the Oil & Gas Natural Resource Account tax (0.17%) are shown. The tax rate on royalties is constant, regardless of the tax rate on the working interest. Working interest tax rates are subject to numerous conditions that determine the tax rate applied to the gross value of production.

Table 2
Oil and Natural Gas Tax Rates by Well & Ownership Classification

		Working Interest		Royalty Interest	
Product	**Well Classification**	**Production Tax Rate**	**Total Tax[1]**	**Production Tax Rate**	**Total Tax[1]**
Natural Gas	**Vertical Wells**				
	First 12 Months	0.50%	0.76%	14.80%	15.06%
	After 12 Months:				
	Drilled Post-1999	9.00%	9.26%	14.80%	15.06%
	Drilled Pre-1999	14.80%	15.06%	14.80%	15.06%
	Stripper Well Drilled Pre-1999	11.00%	11.26%	14.80%	15.06%
	Horizontally Completed Wells				
	First 18 Months	0.50%	0.76%	14.80%	15.06%
	After 18 Months	9.00%	9.26%	14.80%	15.06%
Oil	**Vertical Wells**				
	First 12 Months	0.50%	0.76%	14.80%	15.06%
	After 12 Months:				
	Drilled Post-1999	9.00%	9.26%	14.80%	15.06%
	Drilled Pre-1999	12.50%	12.76%	14.80%	15.06%
	Stripper (1-10 bbls/day)[2]	5.50%	5.76%	14.80%	15.06%
	Stripper (> 10 bbls/day)[2]	9.00%	9.26%	14.80%	15.06%
	Stripper Exemption (WTI < $54/bbl)[3]	0.50%	0.76%	14.80%	15.06%
	Stripper Bonus (WTI > $54/bbl)[3]	6.00%	6.26%	14.80%	15.06%
	Horizontally Completed Wells				
	First 18 Months	0.50%	0.76%	14.80%	15.06%
	After 18 Months:				
	Drilled Post-1999	9.00%	9.26%	14.80%	15.06%
	Drilled Pre-1999	12.50%	12.76%	14.80%	15.06%
	Incremental Secondary Production[2&4]	8.50%	8.76%	14.80%	15.06%
	Incremental Tertiary Production[2&4]	5.80%	6.06%	14.80%	15.06%
	Horizontally Recompleted Wells				
	First 18 Months	5.50%	5.76%	14.80%	15.06%
	After 18 Months:				
	Drilled Post-1999	9.00%	9.26%	14.80%	15.06%
	Drilled Pre-1999	12.50%	12.76%	14.80%	15.06%

1 Includes BOGC privilege & license tax and oil & natural gas resource account tax
2 Tax rates only apply when average price of WTI < $30/bbl, otherwise taxed at post-1999 rates
3 Applies to wells that produce 3 barrels per day or less
4 Applies only to the increment of increased production

Risks and Significant Factors

- **Price**
  - Oil prices are a key driver of Montana oil and natural gas production tax revenue, accounting for the majority of the variation in tax revenue in recent years. There is over 90% correlation between changes in oil prices and changes in production tax revenue. To a lesser extent, fluctuations in natural gas prices are approximately 60% correlated with changes in production tax revenue.
  - The volatility of oil and natural gas prices makes it difficult to predict their future paths. Prices are determined by supply and demand, which can be affected by shocks such as technological change, extreme weather phenomena, and geopolitical events. Shocks to oil and natural gas markets can cause large, sudden dips or spikes in prices that may persist for short or long periods of time.
  - Montana oil prices are linked to national and international prices and move in tandem with these prices. West Texas Intermediate (WTI) is the US benchmark oil price and Brent is the international benchmark oil price. Prices received for Montana oil are lower than these benchmark prices. The margin between the price for Montana oil and the price for WTI or Brent oil reflects the transportation costs required to get Montana's oil to major market destinations. The margin between the Montana price and the benchmark prices generally widens or narrows depending on existing transportation constraints.
  - The relationship between Montana natural gas prices and the US benchmark Henry Hub price isn't as rigid as it is for oil prices. There is a large network of natural gas pipelines in the US and Canada, providing a much more fluid market for natural gas. This allows Montana to export natural gas relatively easier and at lower cost than oil. As a result, there is not always a pronounced margin between Montana natural gas prices and national benchmark prices.
  - Oil and natural gas prices have declined significantly from two years ago due to oversupplied markets fueled in part by the US shale boom. The role of the US as a marginal producer will have an impact on the path of prices going forward. Shale oil and gas wells can be brought online relatively quickly, and so exhibit a high degree of flexibility in responding to price changes. For example, rising prices will spur the completion of more wells, and the new production from these wells will increase supply and exert downward pressure on prices to the degree that the output influences the greater supply and demand balance of the commodity.
  - The Organization of Petroleum Exporting Countries (OPEC) still wields significant power in the oil market and can affect the price of oil via changes to its production quota. Currently, OPEC is in the midst of attempting to iron out a deal that would reduce the group's total oil output and provide lift to oil prices.

- **Production**
  - Montana oil production is sourced primarily from the Bakken shale formation in the far eastern part of the state.
  - The geology of the Montana portion of the Bakken formation does not support the same level of oil and natural gas production that has been occurring in North Dakota (the heart of the Bakken shale boom). Significantly less of the Bakken formation underlies Montana, and the oil-bearing rock is much thicker in North Dakota than it is in Montana.
  - Horizontal oil wells have much quicker decline rates than conventional vertical wells. This has introduced an element of volatility into Montana's oil production profile that didn't exist when conventional legacy production dominated oil output in the state. Because stability in production from horizontal wells relies on constant drilling of new wells, any change in the pace of drilling will impact the rate of oil production.
  - Drilling in Montana has been non-existent for a year. The last rig active in the state went offline in November, 2015. Oil prices have yet to recover to a level that supports renewed drilling activity. Without the development of new wells, Montana oil production will continue to decline albeit at a decelerating rate as the stock of existing wells ages.
  - Oil and natural gas production can be negatively affected by harsh weather conditions, especially in the shale formations where cold temperatures and high winds can put a stop to well drilling and completion activities.
  - Exploration and production activity in other parts of Montana has not proved to be nearly as fruitful as the Bakken. Output from the historically productive Red River formation has been declining steadily. Efforts to inject CO_2 into the Bell Creek field in Powder River County have been successful in enhancing oil output from the legacy field.
  - Output from Montana's conventional natural gas wells has been declining as low prices have stymied drilling and led to some well shut-ins. Shale drilling led to a large increase in associated natural gas (a byproduct of oil production and is captured wellhead) production in the state, but this too has dropped off alongside the cessation of drilling in the Bakken. The future of the state's natural gas output is partially tied to what happens in the Bakken due to those wells' ability to produce large amounts of natural gas.

Forecast Methodology

Step 1. Estimate oil and natural gas production.

Oil Production

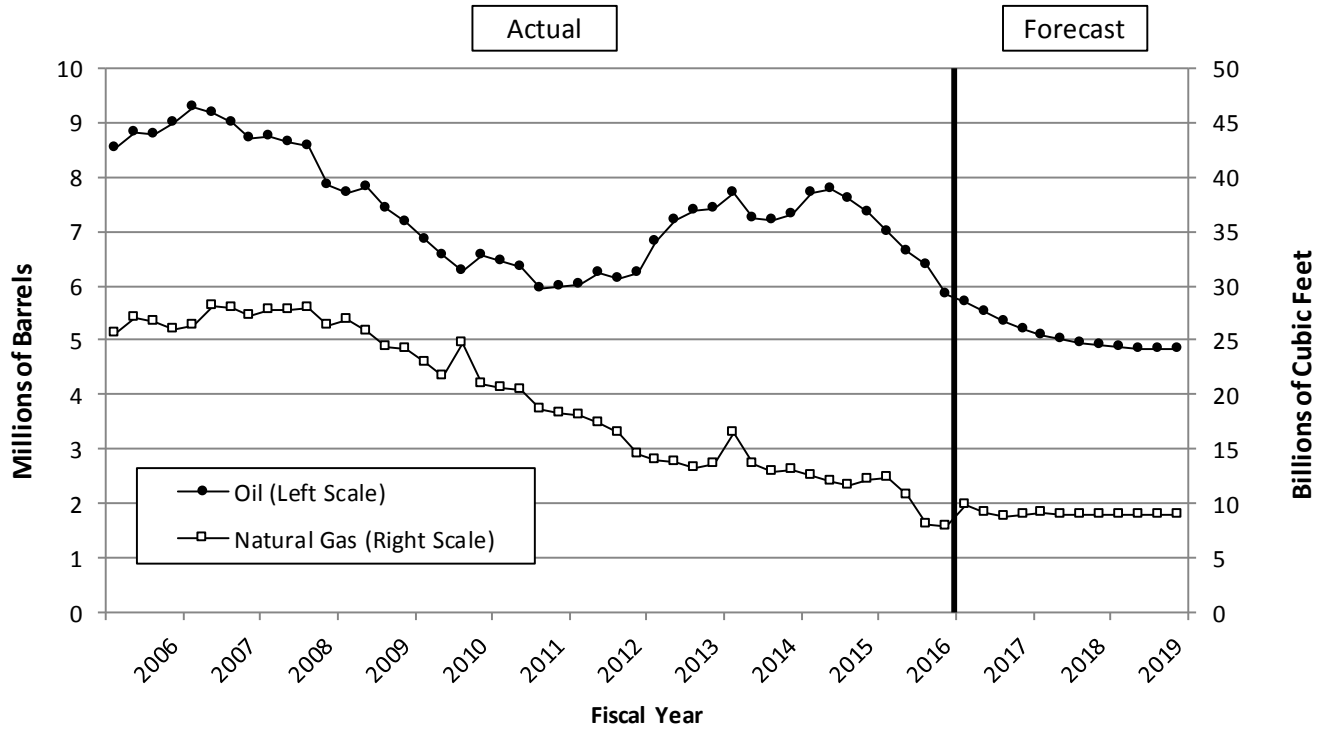
- Quarterly Montana oil production is modeled using an autoregressive integrated moving average (ARIMA) model. This method uses the first difference of the oil production series. In other words, the changes in oil production from period to period are modeled instead of the levels. This technique allows important statistical properties like mean and variance to remain constant over time. The explanatory variables included in the ARIMA model include lags of the dependent variable and lags of the model errors. Including lagged values of the dependent variable allows the past observations of the change in oil production to help inform the estimation of the current change in production. The addition of lagged errors accounts for past shocks to oil production that persist and affect oil production in periods subsequent to the incidence of the shock.
- The forecast for Montana oil production maintains the downward trajectory that has been prevalent over the last six quarters; however, the rate of decline flattens out as time progresses. Output from horizontal oil wells declines most rapidly over the first few years of a well's life, leveling off fairly quickly after the initial steep decline. With no significant new drilling expected to occur in the near future, the trend of Montana oil production is forecast to follow a path that reflects the general decline in output from the existing stock of horizontal wells in the state.

Natural Gas Production

- Quarterly Montana natural gas production is modeled using a four-period moving average. The moving average smooths out the fluctuations in the series to identify the underlying trend and then projects the trend forward.
- Forecast Montana natural gas production is estimated to remain relatively stable over the next three years.

Graph 1 shows the actual and projected quarterly production levels of oil and natural gas in Montana from FY 2006 through FY 2019.

Graph 1
Montana Oil and Natural Gas Quarterly Production



Step 2. Estimate the price of oil and natural gas.

Oil Price

- Quarterly Montana oil prices are estimated using a linear regression model. The first-differencing technique is employed to improve the statistical properties of the series. Changes in the price received for Montana oil are modeled against changes in the price of WTI, which is the sole explanatory variable included in the model. Movements in Montana oil prices are highly correlated with movements in WTI prices, making the price of WTI a significant determinant of the price of Montana oil. Forecast values of WTI prices through FY 2019 are used to generate estimated Montana prices for the same time period. The future values of WTI prices are obtained from IHS Markit.
- Montana oil prices are forecast to rise gradually alongside WTI prices throughout the forecast period. The margin between Montana and WTI oil prices has narrowed as oil production in the Bakken has slowed down. Transportation constraints have eased, lowering the cost of shipping Montana oil to market destinations.

Natural Gas Price

- Quarterly Montana natural gas prices are forecast using an autoregressive model. The inputs into the model include the Henry Hub natural gas spot price and a one-period lag of the Montana natural gas price. Montana natural gas prices generally track movements in the Henry Hub price and are projected to be closely linked to future values of the Henry Hub price. Forecast Henry Hub prices are obtained from IHS Markit. Additionally, observations of Montana natural gas prices tend to be correlated with prior observations, hence the inclusion of the one-period lag of the dependent variable in the model.
- Montana natural gas prices are forecast to rise initially and then level off for the remainder of the forecast period. During this time, Montana prices are estimated to remain below the Henry Hub price. This has generally been the case historically, but there have been instances where Montana prices have matched or briefly eclipsed Henry Hub prices.

Table 3 shows quarterly WTI and Montana oil prices in dollars per barrel. Actual prices are shown from FY 2006 though FY 2016 and forecast prices are shown for FY 2017 through FY 2019.

Table 3
Montana and West Texas Intermediate Oil Prices
(Dollars per Barrel)

Fiscal Year	Montana Price	WTI Price
A 2006	$57.32	$64.25
A 2007	$55.84	$63.38
A 2008	$88.03	$97.01
A 2009	$60.12	$69.76
A 2010	$65.40	$79.04
A 2011	$80.78	$89.42
A 2012	$85.45	$95.04
A 2013	$84.13	$92.26
A 2014	$88.70	$101.32
A 2015	$58.37	$69.33
A 2016	$34.33	$41.74
F 2017	**$40.67**	**$47.43**
F 2018	**$48.98**	**$52.12**
F 2019	**$56.68**	**$60.47**

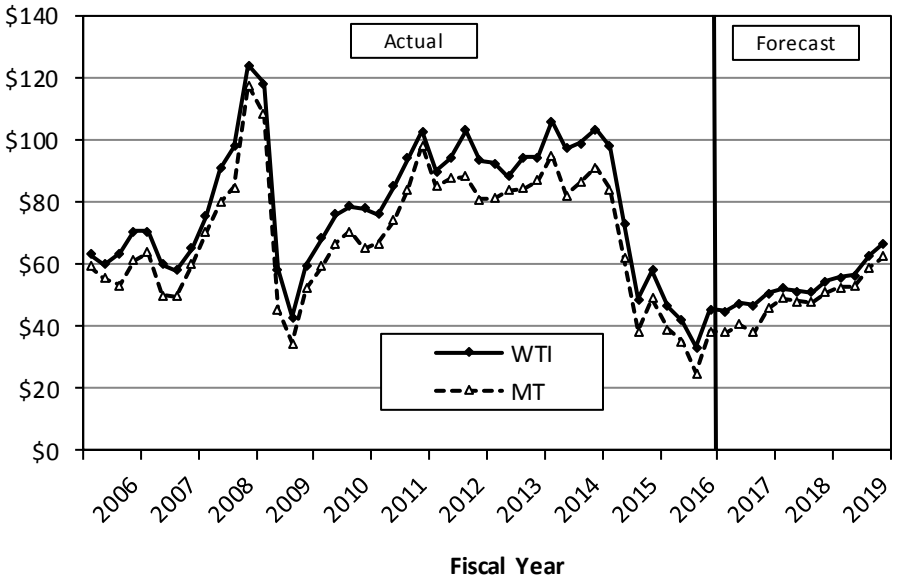
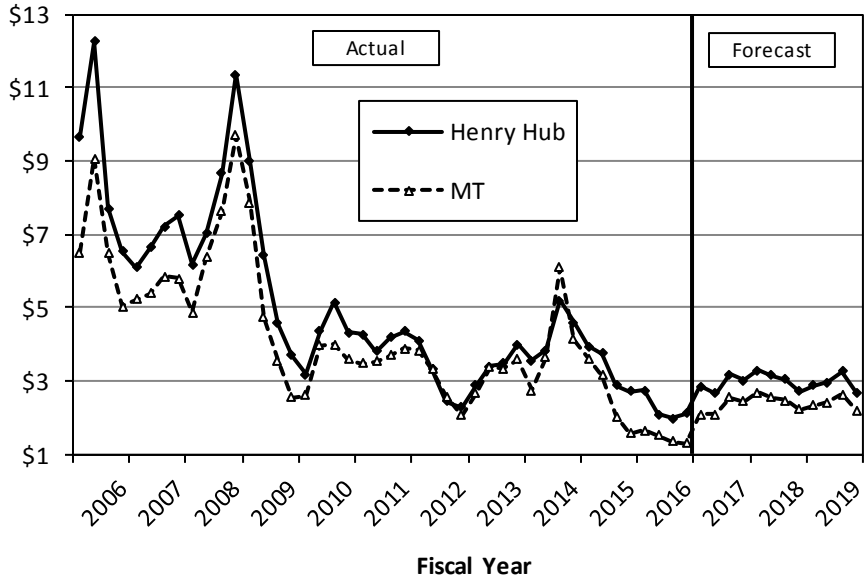


Table 4 shows quarterly Henry Hub and Montana natural gas prices in dollars per thousand cubic feet (Mcf). Actual prices are shown for FY 2006 though FY 2016 and forecast prices are shown for FY 2017 through FY 2019.

Table 4
Montana and National Natural Gas Prices
(Dollars per Mcf)

Fiscal Year	Montana Price	National Price
A 2006	$6.77	$9.04
A 2007	$5.57	$6.87
A 2008	$7.14	$8.30
A 2009	$4.68	$5.92
A 2010	$3.54	$4.25
A 2011	$3.64	$4.16
A 2012	$2.94	$3.04
A 2013	$3.24	$3.45
A 2014	$4.16	$4.30
A 2015	$2.60	$3.32
A 2016	$1.46	$2.24
F 2017	**$2.29**	**$2.93**
F 2018	**$2.48**	**$3.05**
F 2019	**$2.41**	**$2.95**



Step 3. Estimate effective tax rates for oil and natural gas production and determine tax revenue.

- Effective tax rates are estimated for both working and royalty ownership interests. The effective tax rate for the working interest portions of oil and natural gas production varies from year to year because there are different nominal tax rates for different types of working interest production. All royalty interest production is taxed at one rate, so the effective tax rate is equal to the nominal tax rate.
- A four-year moving average is used to estimate effective working interest tax rates for oil and natural gas production over the forecast period. Effective royalty tax rates are assumed to equal the nominal rates for all forecast years.
- Working interest oil tax revenue is determined by multiplying the effective working interest tax rate for oil production by the estimated gross value of working interest oil production. Tax revenue for the working interest portion of natural gas revenue is determined by the same method.
- Royalty tax revenue for oil and natural gas is calculated by applying the royalty tax rate of 15.06% to the gross royalty value of oil and natural gas production.
- Total oil and natural gas tax revenue to be distributed to the State of Montana is equal to the sum of working interest and royalty interest tax revenue from oil and natural gas production.

Table 5 shows the components that determine total tax revenue from oil production in Montana. Similarly, Table 6 summarizes how total tax revenue from natural gas production is calculated. Table 7 shows the combination of oil and natural gas tax revenue, plus audit, penalty, and interest income, to determine total tax revenue received by the State of Montana. All of the tables show actual values for FY 2006 - FY 2016 and forecast values for FY 2017 - FY 2019.

Table 5
Montana Oil Revenue
($ millions)

Fiscal Year	Millions of Barrels of Oil	Gross Value		Non-Taxable Royalty Value		Taxable Value		Average Tax Rate		Tax Revenue
A 2006	35.102	$2,012.291	-	$50.960	=	$1,961.331	X	7.25%	=	$145.941
A 2007	36.161	$2,019.382	-	$51.127	=	$1,968.255	X	8.01%	=	$161.683
A 2008	33.758	$2,946.052	-	$75.143	=	$2,870.909	X	8.89%	=	$262.008
A 2009	30.083	$1,818.753	-	$47.884	=	$1,770.869	X	9.49%	=	$172.517
A 2010	26.212	$1,710.860	-	$46.919	=	$1,663.942	X	10.05%	=	$171.924
A 2011	24.707	$1,986.368	-	$52.253	=	$1,934.115	X	9.64%	=	$191.425
A 2012	24.625	$2,103.995	-	$55.603	=	$2,048.392	X	9.21%	=	$193.861
A 2013	28.765	$2,421.783	-	$63.578	=	$2,358.206	X	8.23%	=	$199.334
A 2014	29.433	$2,613.755	-	$65.875	=	$2,547.879	X	8.23%	=	$215.165
A 2015	30.439	$1,782.300	-	$46.658	=	$1,735.642	X	8.33%	=	$148.482
A 2016	25.808	$887.063	-	$24.673	=	$862.389	X	9.17%	=	$81.353
F 2017	**21.738**	**$882.498**	-	**$22.062**	=	**$860.436**	X	**9.40%**	=	**$82.991**
F 2018	**19.958**	**$977.417**	-	**$24.435**	=	**$952.981**	X	**9.44%**	=	**$92.238**
F 2019	**19.358**	**$1,096.908**	-	**$27.423**	=	**$1,069.485**	X	**9.44%**	=	**$103.588**

Table 6
Natural Gas Production Revenue
($ millions)

Fiscal Year	Billions of Cubic Feet of Gas	Gross Value		Non-Taxable Royalty Value		Taxable Value		Average Tax Rate		Tax Revenue
A 2006	105.239	$714.764	-	$34.324	=	$680.440	X	8.26%	=	$59.044
A 2007	109.496	$610.131	-	$27.714	=	$582.417	X	7.96%	=	$48.558
A 2008	109.821	$780.503	-	$32.326	=	$748.177	X	7.78%	=	$60.718
A 2009	101.130	$482.221	-	$22.644	=	$459.578	X	8.71%	=	$41.986
A 2010	90.277	$319.983	-	$14.803	=	$305.181	X	9.50%	=	$30.391
A 2011	78.024	$284.145	-	$13.467	=	$270.677	X	9.32%	=	$26.471
A 2012	66.385	$199.010	-	$8.054	=	$190.957	X	9.55%	=	$19.001
A 2013	54.626	$177.013	-	$6.636	=	$170.377	X	9.33%	=	$16.508
A 2014	56.039	$227.501	-	$8.662	=	$218.839	X	9.18%	=	$20.884
A 2015	48.463	$126.552	-	$5.169	=	$121.383	X	9.18%	=	$11.617
A 2016	39.356	$58.460	-	$2.347	=	$56.112	X	9.66%	=	$5.646
F 2017	**36.738**	**$83.946**	-	**$3.148**	=	**$80.798**	X	**9.69%**	=	**$8.138**
F 2018	**36.215**	**$89.927**	-	**$3.372**	=	**$86.555**	X	**9.71%**	=	**$8.728**
F 2019	**36.128**	**$86.936**	-	**$3.260**	=	**$83.676**	X	**9.71%**	=	**$8.440**

Table 7 Montana Oil and Gas Tax Revenue ($ millions)								
Fiscal Year	Oil Revenue		Natural Gas Revenue		Audits, Penalties, & Interest		Total Revenue
A 2006	$145.941	+	$59.044	+	$1.429	=	$206.414
A 2007	$161.683	+	$48.558	+	$1.242	=	$211.483
A 2008	$262.008	+	$60.718	+	$3.168	=	$325.894
A 2009	$172.517	+	$41.986	+	$5.221	=	$219.723
A 2010	$171.924	+	$30.391	+	$1.395	=	$203.711
A 2011	$191.425	+	$26.471	+	$1.254	=	$219.150
A 2012	$193.861	+	$19.001	+	$0.737	=	$213.599
A 2013	$199.334	+	$16.508	+	$1.366	=	$217.207
A 2014	$215.165	+	$20.884	+	$0.864	=	$236.913
A 2015	$148.482	+	$11.617	+	-$0.605	=	$159.494
A 2016	$81.353	+	$5.646	+	$0.590	=	$87.590
F 2017	**$82.991**	**+**	**$8.138**	**+**	**$0.554**	**=**	**$91.683**
F 2018	**$92.238**	**+**	**$8.728**	**+**	**$0.351**	**=**	**$101.317**
F 2019	**$103.588**	**+**	**$8.440**	**+**	**$0.222**	**=**	**$112.251**

Distribution

Oil and natural gas revenue is distributed in accordance with 15-36-331, MCA.

The BOGC imposes a privilege and license tax in addition to the base oil and natural gas tax rates. This tax rate is currently set at 0.09% of the gross value of oil and natural gas production. The tax rate that determines the amount of revenue distributed to the oil and gas natural resource account is equal to the difference between 0.26% and the rate of the BOGC's privilege and license tax. Currently 0.17% of gross oil and natural gas production value is allocated to the oil and gas natural resource account.

Total oil and gas production tax revenue in Montana is divided between the state and the producing counties. Prior to HB 748 (2003 session), the distribution was based primarily on property tax mill levies. After HB 748, the counties and schools were each assigned a percentage of the production tax revenue generated in their county that they would receive. Beginning in FY 2012, SB 329 (2011 session) capped the amount of oil and natural gas receipts distributed to a school district at 130% of a district's maximum general fund budget (with some exceptions), and distributed any excess revenues to various state special revenue accounts (guarantee account, state school oil and gas impact fund, and county oil and natural gas impact fund). The 2013 legislative session passed SB 175, which changed the local distribution of oil and natural gas tax revenue starting in FY 2014. The amount of oil and natural gas revenue a school district could receive was still capped at 130% of the district's maximum budget; however, school districts with budgets less than $1.5 million were allowed to keep revenue equivalent to up to 150% of their maximum budget. Per SB 175, any excess tax revenue existing in a school district after the aforementioned limits were reached was distributed outwardly to other school districts in a concentric circle pattern until all the excess revenue was exhausted. During the 2015 legislative session, SB 175 was replaced with SB 260, which did away with the concentric circle method of distribution and instead established two negotiated rulemaking committees that were tasked with determining how to allocate the excess tax revenue. Each committee was assigned the authority to portion out 50% of the available revenue. Effective FY 2017 - FY 2019, excess tax revenue from oil and natural gas production is distributed based on the rules established by the two committees.

The state share of oil and natural gas production tax revenue is divided among various funds according to the following schedule:

- 2.16% to the natural resource projects state special revenue account.
- 2.02% to the natural resource operations state special revenue account.
- 2.95% to the orphan share account.
- 2.65% to the university system.
- The remainder, 90.22%, to the general fund.

Chart 3 is a graphic illustration of how oil and natural gas production tax revenue is distributed.

Chart 3
Oil and Gas Severance Tax Revenue Distribution

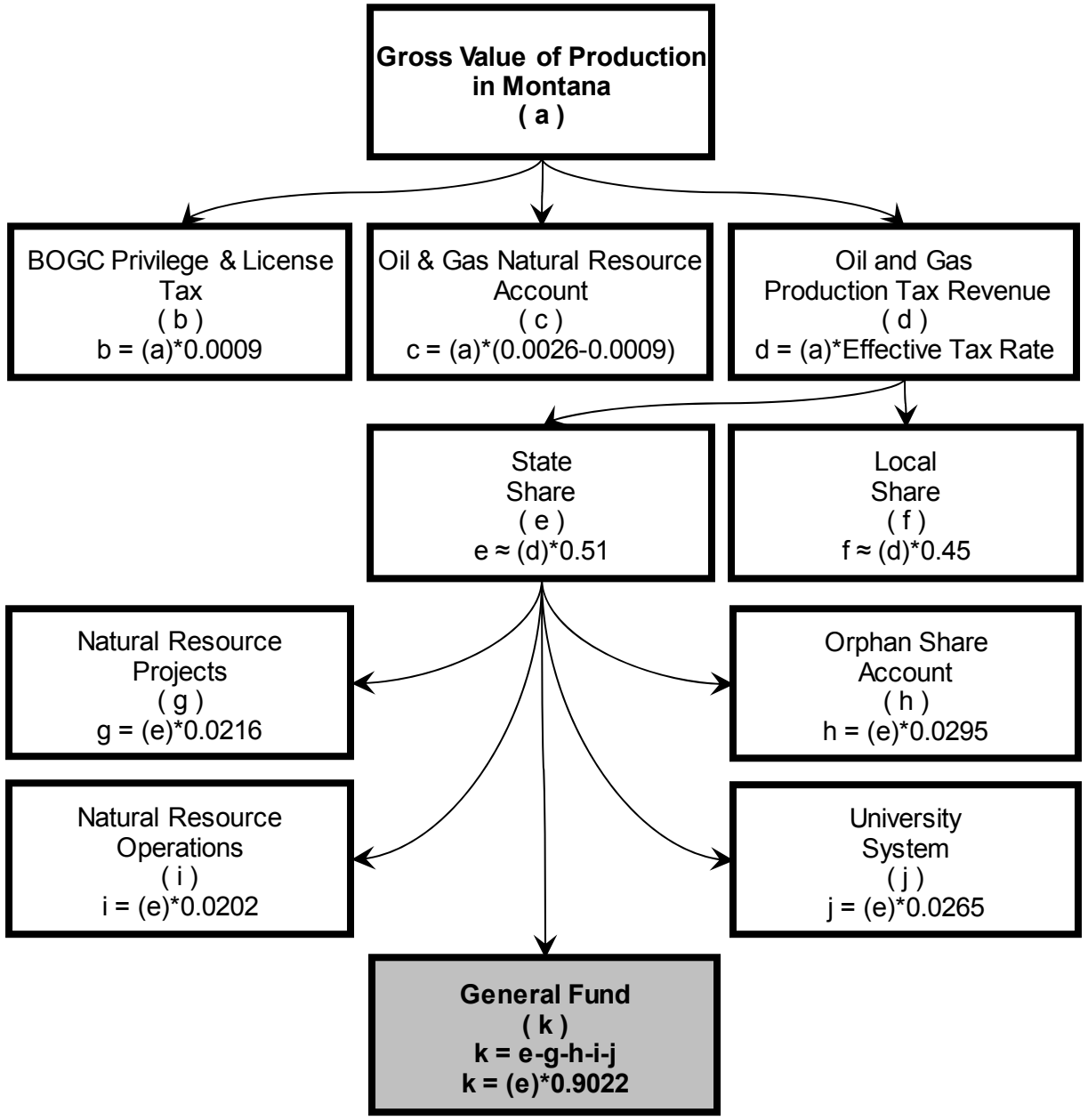


Table 8 shows the actual distribution of oil and natural gas production tax revenues for FY 2016 and forecast distributions for FY 2017 through FY 2019.

Table 8
Oil and Gas Tax Revenue Distribution
($ millions)

Entity	Fiscal Year 2016	**Fiscal Year 2017**	**Fiscal Year 2018**	**Fiscal Year 2019**
Tax Revenue	**$84.934**	**$91.683**	**$101.317**	**$112.251**
BOGC	$0.812	**$0.870**	**$0.961**	**$1.065**
Oil & Gas Natural Resource Acct.	$1.534	**$1.643**	**$1.814**	**$2.013**
County Oil & Gas Impact Fund	$0.000	**$0.000**	**$0.000**	**$0.000**
Guarantee Fund	$0.000	**$0.000**	**$0.000**	**$0.000**
School Oil & Gas Impact Fund	$0.000	**$0.000**	**$0.000**	**$0.000**
State School Oil & Gas Distribution*	$1.395	**$1.506**	**$1.664**	**$1.844**
Local Share	$37.883	**$37.98**	**$41.98**	**$46.51**
State Share	$43.311	**$49.680**	**$54.902**	**$60.824**
Natural Resource Projects Acct. (2.16%)	$0.938	**$1.073**	**$1.186**	**$1.314**
Natural Resource Operations Acct. (2.02%)	$0.877	**$1.004**	**$1.109**	**$1.229**
Orphan Share Acct. (2.95%)	$1.281	**$1.466**	**$1.620**	**$1.794**
University System (2.65%)	$1.150	**$1.317**	**$1.455**	**$1.612**
General Fund Share (90.22%)	**$39.066**	**$44.821**	**$49.533**	**$54.875**

*The existance of this fund was extended by the passage of SB 260 during the 2015 legislative session. It is set to terminate June 30, 2019.

Data Sources

Montana oil and natural gas production tax data are sourced from the Montana Department of Revenue. Historic and forecast WTI prices and Henry Hub prices are from IHS Markit. Supplemental data are obtained from the Montana Board of Oil and Gas Conservation and from the US Energy Information Administration.

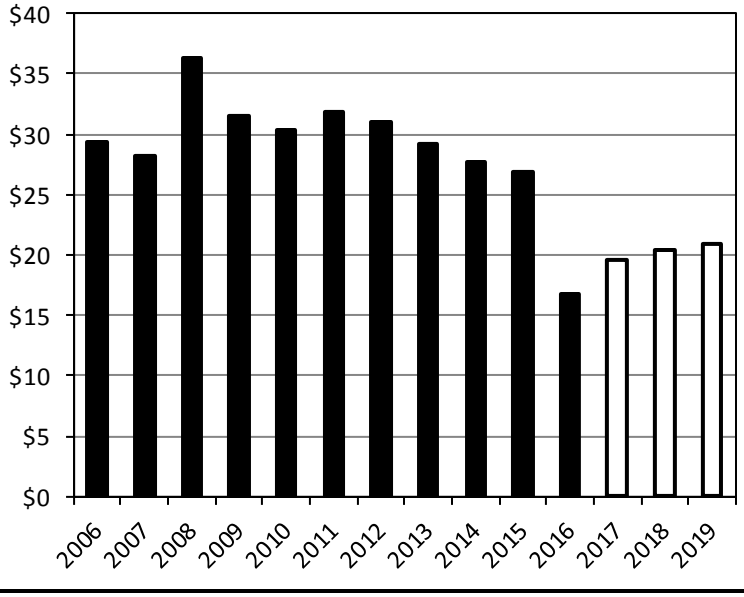
Revenue Description

In accordance with 30 USC, Section 191, a portion of the revenue from minerals extracted in Montana from federal land must be shared with the state of Montana. When the US Government leases public lands for mineral production, it distributes a portion of the royalty income it receives from resource extraction to the state where the leased land is located. In the past, Montana received 50% of the royalty revenue from coal, oil, and natural gas production on federal lands within the state. With the passage of the federal budget for FY 2009, the federal government increased their share to 52% and effectively decreased the state share to 48%. Of the state share, 75% is deposited in the general fund and 25% is deposited in a state special revenue fund, in accordance with 17-3-240, MCA, for distribution to local governments with mineral impacts.

Table 1 shows actual revenue to the general fund from US mineral royalties for FY 2006 through FY 2016, and forecast revenues for FY 2017 through FY 2019.

Table 1
U.S. Mineral Royalties
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$29.304	7.36%
A	2007	$28.221	-3.70%
A	2008	$36.389	28.94%
A	2009	$31.573	-13.23%
A	2010	$30.288	-4.07%
A	2011	$31.923	5.40%
A	2012	$31.057	-2.71%
A	2013	$29.205	-5.96%
A	2014	$27.744	-5.00%
A	2015	$26.960	-2.82%
A	2016	$16.759	-37.84%
F	**2017**	**$19.610**	**17.01%**
F	**2018**	**$20.391**	**3.99%**
F	**2019**	**$20.924**	**2.61%**



General fund revenue from US mineral royalties fluctuates as mineral prices and production levels change. Over the past decade, general fund revenue has ranged from a high of $36.3 million in FY 2008 to a low of $16.7 million in FY 2016. The revenue peak in FY 2008 was the result of exceptionally high oil and natural gas prices in that year. Following FY 2008, revenue was stable around $30 million through FY 2012. Slight declines occurred in the period FY 2013 – FY 2015 before a precipitous drop in FY 2016. A culmination a relatively low resource production volumes and significantly depressed oil and natural gas prices heavily impacted FY 2016 revenue. Mineral royalty revenue is projected to rebound in FY 2017 and then grow slightly in FY 2018 and FY 2019. Increased federal coal production and higher coal prices provide a boost to revenue, as do recovering oil and natural gas prices. Oil and natural gas production is expected to remain subdued, but the effect on royalty revenue is mitigated to a degree by rising prices.

Coal is the leading source of US mineral royalty revenue for Montana, averaging greater than 50% of total collections over the last five years. Oil is the second largest revenue source, averaging near 30% of total collections. The share of royalty collections from natural gas has declined significantly, averaging just 6% of revenue in the last five years compared to 23% in the preceding five years. Royalty revenue from other mineral sources, along with revenue from bonus and rental payments is highly variable, ranging from 22% of collections in FY 2012 to 3% of collections in FY 2015.

The majority of coal production in Montana occurs on federal land, with approximately 50%-60% of the mining occurring on federally owned property. Federal coal production in Montana is expected to rise slightly during FY 2017 - FY 2019 in concert with the expansion of some of Montana's mines. Oil and natural gas production in Montana isn't as concentrated on federal land as coal production. Recently, about 9% of oil production and 25% of natural gas production in Montana has taken place on federal land. The development of the Bakken shale formation in eastern Montana led to a shift in more oil and natural gas being produced on private land.

Risks and Significant Factors

- Most royalty revenue is calculated as a percentage of the gross value of the minerals produced. As prices fluctuate, so does royalty revenue. Oil and natural gas prices are more volatile than coal prices, and have the potential to deviate significantly from expectations over the forecast period. International coal prices have an effect on coal mining in Montana. Rising world prices could bring more Montana coal production online and contribute positively to mineral royalty collections.
- As became apparent with the passage of the FY 2009 federal budget, Congress can change the amount of revenue that gets distributed to the state. Also, changes to the federal Mineral Management Service may affect the timing of some of the revenue flows from year to year.
- Montana has large coal reserves, but it is not known when and to what extent these reserves will be developed. The approval of Signal Peak's expansion plans for its Bull Mountain mine has the potential to increase the amount of coal produced on federal land in Montana, which could increase future royalty revenue.

Forecast Methodology

US mineral royalty revenue is calculated in four steps.

Step 1. Forecast the gross value of coal, oil, and natural gas production on federal land by multiplying estimated production by estimated price. Historical proportions of resource production on federally-owned land in Montana to total state production are used to estimate future production for each resource type. Estimated federal production proportions for each resource type are then multiplied by estimated total Montana production for each resource to determine estimated federal production. Forecast federal production volumes are then multiplied by an estimated price for each resource to determine gross value. The total production and price estimates for coal, oil, and natural gas come from data contained in each resource's respective revenue estimate.

Step 2. Estimate the federal royalty rate to be applied to the gross value of each resource type. The nominal federal royalty rate for coal, oil, and natural gas production is 12.5%. The effective federal royalty rate, however, is often less than 12.5%. The effective federal royalty rate is estimated for each resource type over the forecast period. To determine estimated total royalty revenue from coal, oil, and natural gas production on federal lands in Montana, the gross value of production for each resource type is multiplied by the effective federal royalty rate.

Step 3. Calculate the average percentage of receipts that are remitted by the federal government to the state for each resource type. Although the federal government is required to return 48% of the revenue to the state, there are exceptions that may reduce the actual percentage to less than 48%. This is primarily dependent on the nature of the property where the federal lease is issued. For example, a federal lease could be on General Services Administration (GSA) land, in which case 100% of the revenue would be distributed to the US Treasury. Federal leases on Indian reservations and timing issues between fiscal years can also contribute to variation. The percentage of federal royalty revenue estimated to be returned to the state is assumed to be equal to the percentage of revenue that was returned in the prior year. The state's percentage is multiplied by total federal royalty revenue to yield total state mineral royalty revenue from coal, oil, and natural gas extraction.

Step 4. Estimate revenue from sources other than coal, oil, and natural gas, as well as rental and bonus payments. Montana is assumed to receive 48% of federal rental and bonus payments, and approximately 40% of federal revenue from other sources. Add rental/bonus and other revenue to the state's share of coal, oil, and natural gas revenue to obtain total mineral royalty revenue.

Table 2 shows the actual revenues, royalty rates, and state revenue from federal mineral royalties for FY 2006 through FY 2015. Due to the federal fiscal year, FY 2016 federal production and royalty revenue data are not available and so are estimated; however, the state revenue numbers are FY 2016 actuals. Forecast numbers are shown for FY 2017 through FY 2019.

Table 2
U.S. Mineral Royalty Revenue
($ millions)

Fiscal Year	Coal Income	Royalty Rate	Royalty Revenue	State Percentage	State Revenue	Oil Income	Royalty Rate	Royalty Revenue	State Percentage	State Revenue	Natural Gas Income	Royalty Rate	Royalty Revenue	State Percentage	State Revenue
A 2006	$326.726	10.62%	$34.695	42.65%	14.798	$232.786	11.78%	$27.433	38.43%	$10.542	$211.256	11.77%	$24.875	42.11%	$10.475
A 2007	$290.008	12.10%	$35.084	47.96%	16.827	$206.960	10.91%	$22.569	46.59%	$10.515	$167.103	10.73%	$17.922	47.03%	$8.428
A 2008	$281.414	12.15%	$34.201	50.85%	$17.393	$354.921	10.62%	$37.685	44.99%	$16.955	$186.180	10.96%	$20.414	51.23%	$10.458
A 2009	$262.330	11.96%	$31.366	62.23%	$19.518	$180.710	10.87%	$19.648	51.67%	$10.153	$120.850	10.94%	$13.226	47.95%	$6.342
A 2010	$358.895	11.61%	$41.675	49.80%	$20.754	$223.490	10.59%	$23.657	46.72%	$11.053	$95.875	11.18%	$10.721	44.85%	$4.808
A 2011	$377.500	11.62%	$43.867	49.12%	$21.546	$244.195	10.86%	$26.520	52.01%	$13.793	$68.875	11.46%	$7.895	-17.10%	-$1.350
A 2012	$383.177	11.62%	$44.508	48.28%	$21.487	$231.460	11.87%	$27.471	45.39%	$12.469	$42.430	11.61%	$4.926	46.34%	$2.283
A 2013	$363.321	11.82%	$42.946	48.28%	$20.733	$210.733	11.94%	$25.158	45.38%	11.4179	$33.151	12.93%	$4.286	44.79%	$1.920
A 2014	$362.397	11.89%	$43.107	48.28%	$20.810	$232.066	11.45%	$26.560	45.38%	$12.054	$52.529	13.96%	$7.335	44.79%	$3.285
A 2015	$376.301	11.47%	$43.148	48.28%	$20.830	$187.678	11.55%	$21.681	45.38%	$9.840	$32.634	11.91%	$3.885	44.79%	$1.740
A 2016	$334.732	11.73%	$39.255	48.28%	$18.951	$91.176	11.65%	$10.618	45.38%	$4.819	$14.808	12.93%	$1.915	44.79%	$0.858
F 2017	**$337.544**	**11.70%**	**$39.480**	**48.28%**	**$19.059**	**$88.050**	**11.55%**	**$10.168**	**45.38%**	**$4.614**	**$20.374**	**12.93%**	**$2.635**	**44.79%**	**$1.180**
F 2018	**$351.892**	**11.63%**	**$40.925**	**48.28%**	**$19.757**	**$96.124**	**11.58%**	**$11.133**	**45.38%**	**$5.053**	**$22.104**	**12.59%**	**$2.783**	**44.79%**	**$1.247**
F 2019	**$355.613**	**11.68%**	**$41.551**	**48.28%**	**$20.059**	**$104.847**	**11.59%**	**$12.153**	**45.38%**	**$5.516**	**$20.990**	**12.82%**	**$2.691**	**44.79%**	**$1.205**

Fiscal Year	Rentals and Bonuses	Royalty Rate	Revenue	State Percentage	State Revenue	Other Revenue	Royalty Rate	Other Revenue	State Percentage	State Revenue	State Coal Revenue		State Oil Revenue		State Gas Revenue		All Other Revenue		Total State Revenue
A 2006	$4.653	100%	$4.653	39.56%	1.841	$2.785	NA	$2.785	20.85%	$0.581	$14.798	+	$10.542	+	$10.475	+	$2.422	=	$38.236
A 2007	$5.084	100%	$5.084	42.47%	2.159	$2.720	NA	$2.720	45.20%	$1.230	$16.827	+	$10.515	+	$8.428	+	$3.389	=	$39.158
A 2008	$8.786	100%	$8.786	44.72%	3.929	$2.154	NA	$2.154	9.71%	$0.209	$17.393	+	$16.955	+	$10.458	+	$4.138	=	$48.944
A 2009	$8.906	100%	$8.906	45.11%	$4.018	$14.798	NA	$14.798	44.11%	$6.527	$19.518	+	$10.153	+	$6.342	+	$10.545	=	$46.559
A 2010	$14.046	100%	$14.046	48.18%	$6.767	$1.994	NA	$1.994	19.19%	$0.383	$20.754	+	$11.053	+	$4.808	+	$7.149	=	$43.765
A 2011	$11.954	100%	$11.954	48.11%	$5.751	$2.487	NA	$2.487	136.08%	$3.384	$21.546	+	$13.793	+	-$1.350	+	$9.134	=	$43.125
A 2012	$21.264	100%	$21.264	50.84%	$10.811	$0.300	NA	$0.300	49.46%	$0.149	$21.487	+	$12.469	+	$2.283	+	$10.959	=	$47.198
A 2013	$5.390	100%	$5.390	23.78%	$1.282	$1.929	NA	$1.929	39.06%	$0.753	$20.733	+	$11.418	+	$1.920	+	$2.035	=	$36.106
A 2014	$3.149	100%	$3.149	48.00%	$1.511	$0.200	NA	$0.200	39.06%	$0.078	$20.810	+	$12.054	+	$3.285	+	$1.590	=	$37.739
A 2015	$1.508	100%	$1.508	48.00%	$0.724	$0.149	NA	$0.149	39.06%	$0.058	$20.830	+	$9.840	+	$1.740	+	$0.782	=	$33.192
A 2016	$2.221	100%	$2.221	48.00%	$1.066	$0.645	NA	$0.645	39.06%	$0.252	$18.951	+	$4.819	+	$0.858	+	$1.318	=	$25.945
F 2017	**$2.097**	**100%**	**$2.097**	**48.00%**	**$1.007**	**$0.731**	**NA**	**$0.731**	**$0.391**	**$0.285**	**$19.059**	**+**	**$4.614**	**+**	**$1.180**	**+**	**$1.292**	**=**	**$26.146**
F 2018	**$2.008**	**100%**	**$2.008**	**48.00%**	**$0.964**	**$0.431**	**NA**	**$0.431**	**39.06%**	**$0.168**	**$19.757**	**+**	**$5.053**	**+**	**$1.247**	**+**	**$1.132**	**=**	**$27.188**
F 2019	**$1.932**	**100%**	**$1.932**	**48.00%**	**$0.927**	**$0.489**	**NA**	**$0.489**	**39.06%**	**$0.191**	**$20.059**	**+**	**$5.516**	**+**	**$1.205**	**+**	**$1.118**	**=**	**$27.899**

Distribution

US mineral royalties are distributed to both the general fund and the mineral impact account in accordance with 17-3-240, MCA. Table 3 shows the distribution of US mineral royalty revenue to the state of Montana for FY 2006 through FY 2016 along with the estimated distribution for FY 2017 through FY 2019.

Table 3
U.S. Mineral Royalty
Revenue Distribution
($ millions)

	Fiscal Year	General Fund (75%)	Mineral Impact (25%)	Total
A	2006	$29.304	$9.768	$39.071
A	2007	$28.221	$9.407	$37.628
A	2008	$36.389	$12.130	$48.518
A	2009	$31.573	$10.524	$42.098
A	2010	$30.288	$10.096	$40.384
A	2011	$31.923	$10.641	$42.564
A	2012	$31.057	$10.352	$41.409
A	2013	$29.205	$9.735	$38.940
A	2014	$27.744	$9.248	$36.992
A	2015	$26.960	$8.987	$35.947
A	2016	$16.759	$5.586	$22.345
F	**2017**	**$19.610**	**$6.537**	**$26.146**
F	**2018**	**$20.391**	**$6.797**	**$27.188**
F	**2019**	**$20.924**	**$6.975**	**$27.899**

Data Sources

General fund and mineral impact account revenue are from SABHRS. Federal mineral statistics are available from the Department of Interior's Office of Natural Resources Revenue.

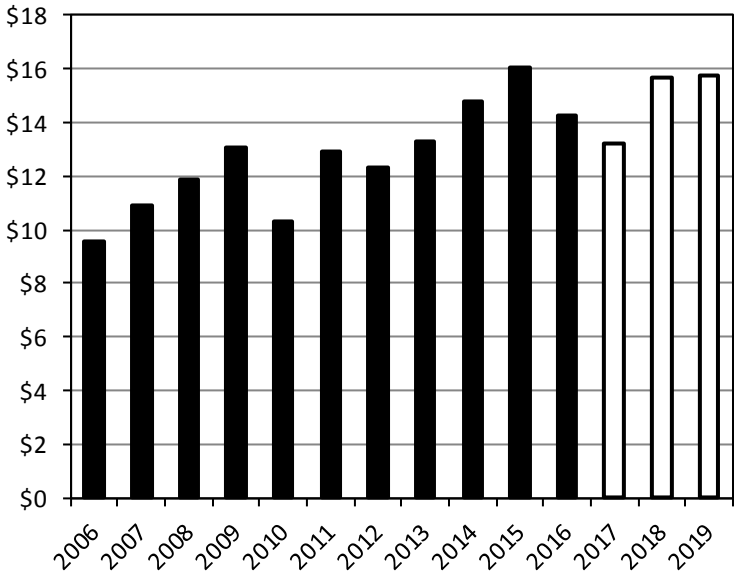
Revenue Description

In accordance with 15-35-103, MCA, Montana levies a tax on the value of coal produced in the state. The tax rate on coal varies with heat content of the coal (measured in Btu per pound) and the type of mine (open pit, auger, or underground). Each producer is exempt from tax on 2 0,000 tons per year. If a producer mines 50,000 tons or less per year, they are exempt from the tax entirely.

Table 1 shows actual coal severance tax revenue to the general fund for FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019.

Table 1
Coal Severance Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$9.597	-6.94%
A	2007	$10.919	13.78%
A	2008	$11.894	8.93%
A	2009	$13.028	9.53%
A	2010	$10.322	-20.77%
A	2011	$12.883	24.81%
A	2012	$12.350	-4.13%
A	2013	$13.265	7.41%
A	2014	$14.745	11.15%
A	2015	$16.063	8.94%
A	2016	$14.236	-11.38%
F	**2017**	**$13.225**	**-7.10%**
F	**2018**	**$15.650**	**18.33%**
F	**2019**	**$15.724**	**0.48%**



Coal severance tax reve nue is di stributed to nume rous fun ds, m any of whi ch aid in the suppo rt of nat ural resou rce development projects and impact mitigation plans. The largest share of the coal severance tax (50%) is deposited into the coal severance tax trust fund which earns interest for the benefit of the state pension plan as well as local infrastructure projects (for more information on the coal severance tax trust fund see section 10-3). While about 25% of coal severance tax collections are deposited into the general fund, the general fund bottom line is ultimately unaffected because there is a commensurate transfer, per 15-35-108(9)(a), MCA, to the state's public employee retirement system.

Risks and Significant Factors

- One of the p rimary uses f or coal is in the produ ction of electri city at c oal-fired power pl ants. Montana coal is shipped to many states in the US and also exported overseas. New ai r pollution regul ations proposed by the Environmental Protection Agency (EPA) are leading to shutdowns of some of the nation's older coal-fired power plants. It is unclear if the n ew regulations will have a significant impact on US domestic coal demand. Demand for Montana coal is expected to remain consistent over the forecast period.
- In March 2014, the Monta na Land Board approved an expansion plan for Si gnal Peak E nergy's Bull Mo untain Mine in Musselshell county. The expansion is expected to add nine years to the life of the mine. At this time, it is not clear when the expan sion will be completed and how it will affect coal production from the mine. If th e expansion results in more annual coal production, increased coal severance tax revenues would likely result.
- International coal prices influence the vi ability of Mo ntana coal ex ports. The le vel of the be nchmark Australia

Newcastle thermal coal price supported strong Montana export volumes from 2011 through mid-2014. International coal prices started to slip in late 2014 and continued to crater in 2015, remaining subdued through the first six months of 2016. Montana coal exports responded by dropping sharply, and as of late 2016 have almost completely dried up. Without exports, total Montana coal production is lower and severance tax revenue suffers. International prices have ticked up in recent months, a development that, if sustained, will likely bring some Montana coal exports back online.

Forecast Methodology

Below are the steps involved in forecasting coal severance tax revenue:

Step 1. Estimate the quarterly average price across all mines using a four-period moving average. The estimated price for the fiscal year is the four-quarter average.

Step 2. Forecast total monthly coal production from taxable mines in Montana. Total monthly production is estimated using an autoregressive model with three variables: a one-period autoregressive lag, a seasonal autoregressive lag, and the monthly Henry Hub natural gas price. The one-period lag allows the model to use last period's production to help inform the current period's production. The seasonal lag helps control for seasonality in the coal production series by using coal production twelve months prior to the current period as an explanatory variable. The natural gas price variable is included to allow the model to capture information about the fuel mix used at electric generating stations that consume Montana coal.

Step 3. Monthly coal production estimates are summed by fiscal year and then multiplied by the estimated price for that year to obtain total gross value of the coal produced.

Step 4. Estimate total deductions and exemptions for the fiscal year to determine taxable coal production. Deductions and exemptions include the first 20,000 tons produced in a year (for operator's with over 50,000 tons of production per year), and the deductions for other state and federal tax liabilities related to coal production including the black lung tax, the coal gross proceeds tax, federal reclamation tax, and others.

Step 5. Apply an estimated average tax rate to yield total coal severance tax revenue. The tax rate varies by mine based on the heating quality of the coal and the process employed to remove the coal from the ground. To account for differing tax rates across mines, a weighted average tax rate is estimated and used to determine annual coal severance tax revenue.

Table 2 shows actual coal production, average price per ton, total deductions, taxable revenue, average tax rate, and total coal severance tax revenue for FY 2014 through FY 2016, along with estimates for FY 2017 through FY 2019.

Table 2
Coal Severance Tax
(millions)

	FY 2014	FY 2015	FY 2016	**FY 2017**	**FY 2018**	**FY 2019**
Tons Produced	35.725	39.079	30.920	**31.242**	**32.768**	**33.007**
Average FOB Price	x $16.71	x $16.37	x $17.27	**x $17.96**	**x $18.05**	**x $18.07**
Gross Revenue	$597.098	$639.882	$534.005	**$561.071**	**$591.617**	**$596.500**
Exemptions	- $148.707	$154.610	$127.559	**$140.255**	**$147.891**	**$149.111**
Taxable Revenue	$448.391	$485.272	$406.446	**$420.816**	**$443.726**	**$447.388**
Average Tax Rate	x 12.11%	x 12.16%	x 12.16%	**x 12.74%**	**x 12.82%**	**x 12.77%**
Tax Revenue	$54.322	$58.990	$49.425	**$53.628**	**$56.874**	**$57.152**

Distribution

Coal Severance tax is distributed in accordance with 15-35-108, MCA. Table 3 shows the distribution of actual and estimated coal severance tax revenue for FY 2016 through FY 2019. The amount shown in Table 3 for general fund revenue does not match Table 1 because Table 3 does not include estimated revenue from audit, penalty, and interest payments.

Table 3
Coal Severance Tax Revenue Allocation by Fund
($ millions)

Entity	Percent Allocation	FY 2016 Actual	**FY 2017 Projected**	**FY 2018 Projected**	**FY 2019 Projected**
Coal Tax Trust Fund (50%)	50.00%	$30.179	**$26.814**	**$28.437**	**$28.576**
Long Range Building Program Account	12.00%	$7.243	**$6.435**	**$6.825**	**$6.858**
Local Impacts (Shared Account)	5.46%	$3.296	**$2.928**	**$3.105**	**$3.120**
Coal Board (5.8% in FY 16 & FY 17)	2.90%	$3.435	**$3.110**	**$1.649**	**$1.657**
Parks Trust Fund	1.27%	$0.767	**$0.681**	**$0.722**	**$0.726**
Renewable Resource Loan Debt Service Fund	0.95%	$0.573	**$0.509**	**$0.540**	**$0.543**
Capitol Art Protection Trust Fund	0.63%	$0.380	**$0.338**	**$0.358**	**$0.360**
DEQ Mine Permitting and Restoration	$250k	$0.250	**$0.250**	**$0.250**	**$0.250**
General Fund	Remainder	$14.236	**$12.562**	**$14.986**	**$15.061**
Total Coal Severance Tax		**$60.359**	**$53.628**	**$56.874**	**$57.152**

Data Sources

Historical quarterly coal data are from the Department of Revenue. Monthly coal production data are from the Department of Labor and Industry.

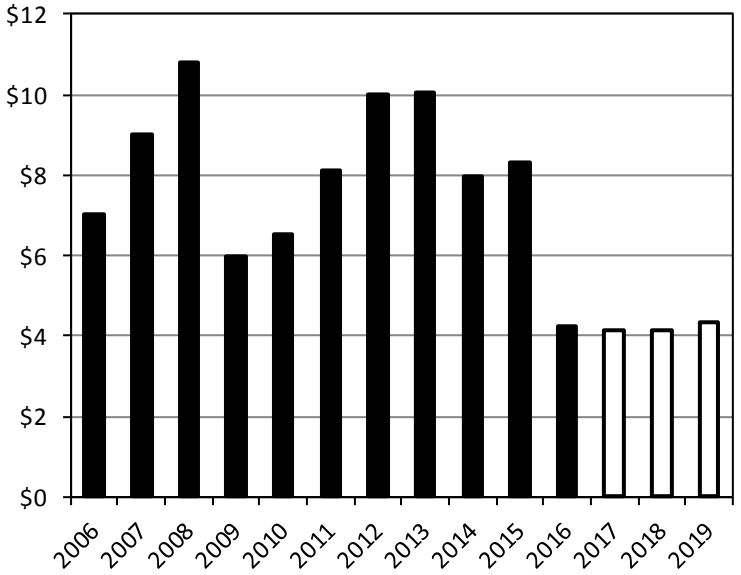
Revenue Description

Montana levies a tax on the gross value of metals mined in the state under 15-37-101, MCA. Gross value, as defined in 15-23-801, MCA, is the market value of the refined product, less the costs of transporting the unrefined product and refining it. The first $250,000 of gross value is not taxed; this effectively exempts small mines from this tax. The tax rate for production beyond $250,000 depends on the mineral and the amount of processing done at the mine. Concentrate, which is non-smelted ore, has a tax rate of 1.81%. Metals that have been partially or completely separated from impurities by smelting have a tax rate of 1.6% (15-37-103, MCA).

Revenues from the metalliferous mines license tax are divided between the state and counties that have fiscal or economic impacts from large-scale mining. With the passage of SB 20 (2015), the state general fund now receives 47% of metal mines tax collections. Table 1 shows, actual general fund revenue for FY 2006 through FY 2016, and projected revenue for FY 2017 through FY 2019.

Table 1
Metalliferous Mines Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$7.028	33.51%
A	2007	$8.991	27.93%
A	2008	$10.774	19.83%
A	2009	$5.993	-44.38%
A	2010	$6.541	9.15%
A	2011	$8.097	23.77%
A	2012	$10.010	23.64%
A	2013	$10.049	0.39%
A	2014	$7.948	-20.91%
A	2015	$8.320	4.69%
A	2016	$4.221	-49.26%
F	**2017**	**$4.129**	**-2.18%**
F	**2018**	**$4.160**	**0.73%**
F	**2019**	**$4.314**	**3.72%**



From FY 2006 to FY 2015, the general fund received 57% of the total tax collected. Before FY 2006, the general fund received 58% of total tax collections, except in FY 2003 when the general fund received 65% of the tax revenue.

Revenue increased through FY 2008 due to production growth and price increases. Price declines and mine closures during FY 2009 significantly reduced revenues. Revenue recovered with prices through FY 2013. Price declines, a mine closure, and the winding down of an existing mine have led to a drop in revenue. Metals prices are expected to be relatively flat in the forecast period.

Risks and Significant Factors

- The price of metals has varied substantially in recent years. Price increases generate greater revenues.
- Production varies over time but mines have optimal-life cycle production profiles, so production is based on the number of mines in operation.
- New financing could reopen mines, however, production attributable to such deals is not contemplated in this estimate.
- There are four main factors in determining the revenue from metal mines.

- The proportional value weight of each type of metal shifts overall revenue. Production is heavily weighted to copper, gold, molybdenum, palladium, platinum, rhodium, and silver (alphabetic order).
- The amount of each metal produced is positively related to total tax revenue.
- Allowable deductions reduce total tax revenue. Metal producers are allowed to deduct transportation, treatment, and refining costs from the gross value of production. As deductions rise, tax revenue will go down.

- This estimate implicitly assumes that the production mix of metals will remain as it was in FY 2014 - FY 2016.

Forecast Methodology

There are three steps in estimating metal mines tax revenue:

Step 1. FY 2016 production and prices serve as the base for this revenue estimate. Total revenue is projected based on the change in the weighted average of three reference metal prices (copper, platinum, and gold) available monthly from The World Bank's *Commodity Markets Outlook* price forecast.

Step 2. Transportation, refining, and treatment cost deductions are assumed to maintain their FY 2016 share of the total value of production during the forecast period. These are deducted from the gross value of the minerals.

Step 3. The average tax rate that applied during FY 2014 - FY 2016 is applied to the total net value of production to yield fiscal year tax liability.

Table 2 shows the gross value of all mined metal products in Montana, deductions taken by the producers, the average tax rate, and the total tax revenue generated for the metal mines license tax. (These differ slightly from the SABHRS figures due to accruals).

Table 2
Metal Mines Production Forecast
($ millions)

Fiscal Year	Gross Value	Deductions	Net Value	Average Tax Rate	Tax Revenue
A 2014	$970.071	$84.362	$885.7	1.66%	$14.75
A 2015	$876.734	$79.957	$796.8	1.65%	$13.18
A 2016	$622.273	$81.503	$540.8	1.66%	$8.98
F 2017	**$609.208**	**$79.792**	**$529.4**	**1.66%**	**$8.79**
F 2018	**$614.306**	**$80.460**	**$533.8**	**1.66%**	**$8.85**
F 2019	**$636.661**	**$83.388**	**$553.3**	**1.66%**	**$9.18**

Distribution

Table 3 shows the 15-37-117, MCA, distribution of the metal mines tax.

Table 3
Total Collections and Allocation of Metal Mines Tax
($ millions)

Fund	Allocation Percentage	Actual FY 2016	Projected FY 2017	Projected FY 2018	Projected FY 2019
General Fund (47%)	**47.0%**	$4.221	$4.129	$4.160	$4.314
Hard-Rock Mining Impact Trust (2.5%)	**2.5%**	$0.204	$0.220	$0.221	$0.229
Impacted Counties (35.0%)	**35.0%**	$2.473	$3.075	$3.098	$3.213
Natural Resource Operations (7.0%)	**7.0%**	$0.572	$0.615	$0.620	$0.643
Hard-Rock Mining Debt Service (Trust)	**8.5%**	$0.694	$0.747	$0.752	$0.780
Total Collections	**100.0%**	**$8.164**	**$8.786**	**$8.850**	**$9.179**

Data Sources

Historic production, value, and deduction data is from the Department of Revenue. Collections are from SABHRS. Price forecasts are from the October 2016, World Bank's *Commodity Markets Outlook*.

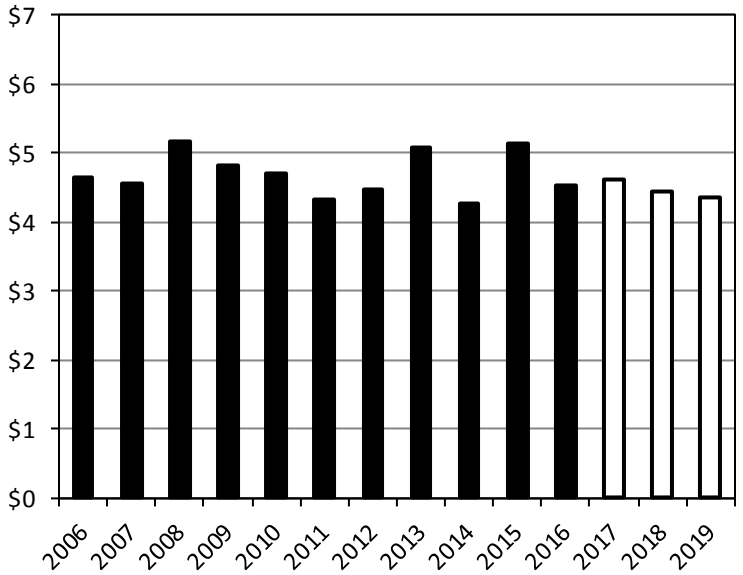
Revenue Description

In accordance with 15-51-101, MCA, Montana levies an electrical energy producer's license tax (EET) at a rate of $0.0002 per kilowatt hour (kWh). The tax applies to all electricity generated, manufactured, or produced in Montana for barter, sale, or exchange. Electricity generated for plant use is excluded from the tax. All revenue from the electrical energy producer's license tax is allocated to the general fund.

Table 1 shows actual general fund revenue collections from the electrical energy producer's license tax for FY 2006 through FY 2016, and the forecast for FY 2017 through FY 2019.

Table 1
Electrical Energy Tax
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$4.645	14.00%
A 2007	$4.564	-1.72%
A 2008	$5.179	13.47%
A 2009	$4.825	-6.84%
A 2010	$4.713	-2.31%
A 2011	$4.332	-8.08%
A 2012	$4.481	3.44%
A 2013	$5.067	13.06%
A 2014	$4.280	-15.53%
A 2015	$5.133	19.93%
A 2016	$4.536	-11.62%
F 2017	**$4.614**	**1.71%**
F 2018	**$4.437**	**-3.83%**
F 2019	**$4.366**	**-1.60%**



Risks and Significant Factors

- US electricity demand growth is expected to remain relatively flat over the forecast period. According to the US Energy Information Administration (EIA), improvements in energy efficiency will mitigate increases in electricity demand.
- The pending legal outcome of the Clean Power Plan (CPP) will impact the mix of fuels used to generate electric power in the US. If the plan is upheld, natural gas and renewables are expected to rise as sources of electric generation, while coal use declines. If the CPP is struck down, electric generation from natural gas and renewables is still expected to rise, but to a lesser degree, and coal use is projected to remain essentially flat.
- Montana's largest electrical generator is the 2,094 megawatt Colstrip coal-fired power plant. The Colstrip station accounts for approximately 50% of the electricity produced in Montana. Since coal accounts for a significant portion of Montana's electrical generation portfolio, the state's electric power industry will be sensitive to external factors that affect the use of coal for electric generation.
- The future of the Colstrip power plant, particularly its older units 1 and 2, faces pressure from low natural gas prices, stricter air pollution regulations, and out-of-state legislation in Washington and Oregon focused on reducing those states' use of coal-sourced electric power.
- Montana continues to see steady growth in electricity generation from renewable sources, with the major contributions coming from wind resources.

Forecast Methodology

Electrical energy tax revenue is forecast in three steps:

Step 1. Estimate taxable kWhs. Taxable kWhs differ from total kWhs produced in Montana because producers are allowed to deduct the amount of electricity used for plant operations. Taxable kWhs are forecast on a quarterly basis using an autoregressive integrated moving average (ARIMA) model. The model incorporates national-level electricity sales information as well as autoregressive and trend components to estimate taxable kWhs produced in Montana. Quarterly observations are summed to arrive at fiscal year totals.

Step 2. Estimate the effective tax rate to be applied to total taxable kWhs. To account for the fact that the effective tax rate is often less than the $0.0002 per kWh outlined in Montana code, an average of previous years' effective tax rates is used to estimate effective tax rates for the forecast years. The tax rate for FY 2017, for example, is estimated by taking the average of the tax rates realized over the period FY 2006 – FY 2016. Tax rates for FY 2018 and FY 2019 are assumed to be the same as the FY 2017 rate.

Step 3. Once taxable kWhs and effectivetax rates are determined for the forecast period, estimated general fund revenue for each of the three forecast years is obtained by multiplying taxable kWhs in a year by the respective effective tax rate.

Table 2 shows actual electricity production and tax revenue for FY 2006 through FY 2016 and forecast values for FY 2017 through FY 2019.

Table 2
Electricity Production Tax Revenue
($ millions)

	Fiscal Year	kWh (millions)		Effective Tax Rate		Tax Revenue
A	2006	23,156.213	X	$0.00020057	=	$4.645
A	2007	23,160.458	X	$0.00019708	=	$4.564
A	2008	24,081.011	X	$0.00021507	=	$5.179
A	2009	23,872.111	X	$0.00020210	=	$4.825
A	2010	23,968.455	X	$0.00019665	=	$4.713
A	2011	24,101.745	X	$0.00017975	=	$4.332
A	2012	22,493.417	X	$0.00019923	=	$4.481
A	2013	25,420.025	X	$0.00019932	=	$5.067
A	2014	21,966.701	X	$0.00019483	=	$4.280
A	2015	25,358.844	X	$0.00020241	=	$5.133
A	2016	21,541.012	X	$0.00021060	=	$4.536
F	**2017**	**23,094.460**	**X**	**$0.00019978**	**=**	**$4.614**
F	**2018**	**22,210.047**	**X**	**$0.00019978**	**=**	**$4.437**
F	**2019**	**21,854.793**	**X**	**$0.00019978**	**=**	**$4.366**

Distribution

Pursuant to 15-51-103 and 17-2-124, MCA, the general fund receives 100% of the electrical energy tax.

Data Sources

Historical electricity data are provided by the Department of Revenue. National-level electricity data are from the EIA.

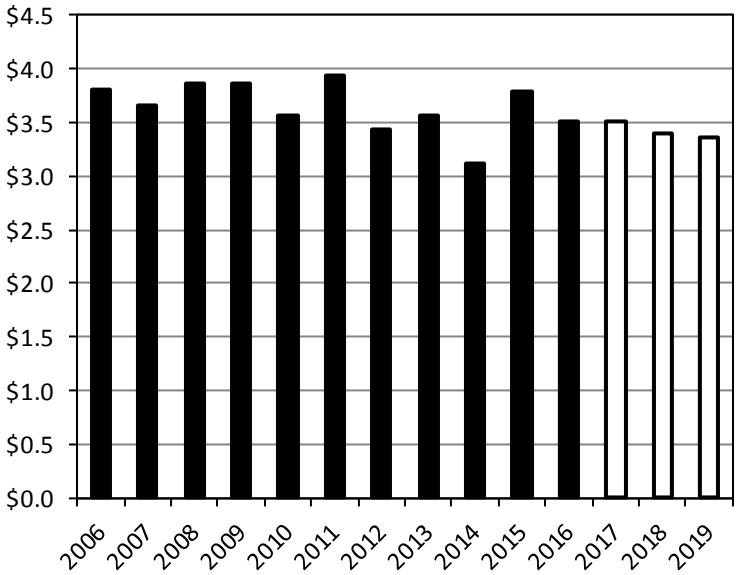
Revenue Description

In accordance with 15-72-104, MCA, Montana levies a wholesale energy transaction (WET) tax at a rate of $0.00015 per kilowatt hour (kWh) on the movement of electricity by a transmission service provider in the state. The movement of electricity includes in-state production delivered out-of-state, in-state production delivered in-state, and out-of-state production delivered in-state. This tax became effective January 1, 2000.

Table 1 shows actual general fund collections from the WET tax for FY 2006 through FY 2016 and the projected revenue for FY 2017 through FY 2019.

Table 1
Wholesale Energy Transaction Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$3.813	13.16%
A	2007	$3.651	-4.26%
A	2008	$3.856	5.62%
A	2009	$3.865	0.22%
A	2010	$3.556	-7.99%
A	2011	$3.946	10.95%
A	2012	$3.427	-13.13%
A	2013	$3.558	3.82%
A	2014	$3.112	-12.53%
A	2015	$3.795	21.95%
A	2016	$3.516	-7.36%
F	**2017**	**$3.502**	**-0.40%**
F	**2018**	**$3.406**	**-2.75%**
F	**2019**	**$3.366**	**-1.16%**



Risks and Significant Factors

- US electricity demand growth is expected to remain relatively flat over the forecast period. According to the US Energy Information Administration (EIA), improvements in energy efficiency will mitigate increases in electricity demand.
- The volatility in tax collections from electrical energy transmission in Montana stems from variation in total kWhs generated for delivery out-of-state, which is generally more than the amount of kWhs generated for delivery in-state.
- Electricity generated at the coal-fired, 2,094 megawatt Colstrip power plant accounts for a large portion of out-of-state transmission, so fluctuations in the power output of Colstrip have a noticeable impact on tax collections.
- WET tax revenue is sensitive to the same factors that influence the electrical energy license tax. Namely, the fate of the Clean Power Plan, continuing air pollution regulations for power plants, and coal-related legislation in Washington and Oregon.
- Montana continues to see steady growth in electricity generation from renewable sources, with the major contributions coming from wind resources. Any new electrical generation capacity coming online in Montana will be a part of the transmission grid and contribute to tax collections.

Forecast Methodology

WET tax revenue is forecast in three steps:

Step 1. Estimate taxable kWhs for out-of-state delivery and in-state delivery separately. In-state taxable kWhs are relatively stable over time, and so are forecast forward using a four-period moving average of quarterly data. Quarterly observations are summed to arrive at fiscal year totals.

Taxable out-of-state kWhs differ from total out-of-state kWhs because firms are allowed a deduction for assumed five percent line loss during transmission. Total taxable out-of-state kWhs are forecast on a quarterly basis using an autoregressive integrated moving average (ARIMA) model. The model incorporates national-level electricity sales information as well as autoregressive and trend components to estimate taxable kWhs produced in Montana that are shipped out-of-state. Quarterly observations are summed to arrive at fiscal year totals.

Step 2. Estimate the effective tax rate to be applied to total taxable in-state and out-of-state kWh transmission. Similar to the effective electrical energy tax rate, the effective tax rate for wholesale electricity transmission often differs from the statutory rate. The effective tax rate for FY 2017 is estimated as the average of effective tax rates from FY 2006 – FY 2016 and the tax rates for FY 2018 and FY 2019 are assumed to be equivalent to FY 2017.

Step 3. Multiply the estimated effective tax rate for wholesale electricity transmission by the estimated amount of taxable kWhs transmitted within the state to yield total tax revenue.

Table 2 shows actual taxable electricity production and realized tax revenue for FY 2006 through FY 2016 and forecasts for FY 2017 through FY 2019.

Table 2
Taxable kWh for Wholesale Energy Tax
($ millions)

Fiscal Year	Taxable KWh (million)		Tax Rate		Tax Revenue
A 2006	24,112.351	x	0.00016	=	$3.813
A 2007	24,609.110	x	0.00015	=	$3.651
A 2008	24,704.406	x	0.00016	=	$3.856
A 2009	24,704.406	x	0.00016	=	$3.865
A 2010	24,772.237	x	0.00014	=	$3.556
A 2011	24,481.526	x	0.00016	=	$3.946
A 2012	22,519.496	x	0.00015	=	$3.427
A 2013	24,838.693	x	0.00014	=	$3.558
A 2014	20,962.124	x	0.00015	=	$3.112
A 2015	24,878.014	x	0.00015	=	$3.795
A 2016	22,875.105	x	0.00015	=	$3.516
F 2017	**23,013.698**	**x**	**0.00015**	**=**	**$3.502**
F 2018	**22,380.326**	**x**	**0.00015**	**=**	**$3.406**
F 2019	**22,120.176**	**x**	**0.00015**	**=**	**$3.366**

Distribution

Pursuant to 15-72-106, MCA, the general fund receives 100% of the WET tax.

Data Sources

Historical electricity data are provided by the Department of Revenue. National-level electricity data are from the EIA.

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

INTEREST REVENUE
SECTION 5

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

Revenue Description

Under Article VIII, Section 13 of the Montana Constitution the Legislature is required to provide for a Unified Investment Program for public funds held by both state and local government. The Montana Board of Investments (BOI) was created and given sole authority to manage the investment of state funds.

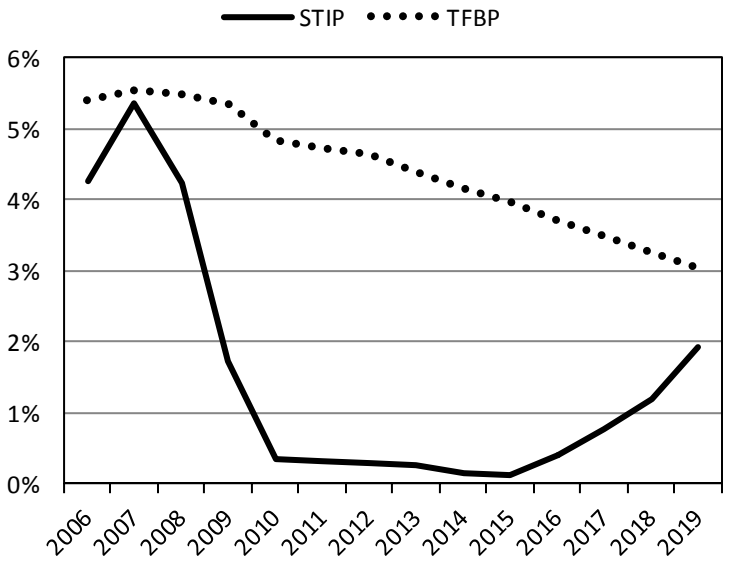
The BOI invests state cash holdings and fund balances in both short-term and long-term assets, with the investment strategy dependent on the specific needs of the account or fund. The BOI invests most agency cash and a small portion of fund balances in the short-term investment pool (STIP). Assets in the STIP have a maximum maturity of two years or less in order to maintain a high level of liquidity. In addition to maintaining liquidity, the STIP is managed in a way that aims to preserve the principle of an investment while at the same time maximizing investment income.

State trust fund balances are invested by the BOI in the Trust Fund Investment Pool (TFIP). The TFIP's portfolio is diversified among three main asset classes: investment grade fixed income assets, high-yield fixed income assets, and core real e state assets. The latter two investment classes are limited to 10% and 8% of the total TFIP portfolio, respectively. The TFIP is managed with the goal of providing a consistent and competitive stream of income to pool participants.

Estimates for the rates of return on the STIP and TFIP are used to forecast interest revenue for the treasury cash account, the common school trust, the various coal trusts, and several other funds. Table 1 shows actual annual percentage interest rates for both STIP and TFIP in FY 2006 through FY 2016, and projections for FY 2017 through FY 2019.

Table 1
Short Term Investment Pool and Trust Fund Investment Pool
Annual Rates of Return

Fiscal Year	STIP	TFIP
A 2006	4.25%	5.41%
A 2007	5.34%	5.53%
A 2008	4.24%	5.49%
A 2009	1.73%	5.35%
A 2010	0.34%	4.83%
A 2011	0.31%	4.73%
A 2012	0.30%	4.63%
A 2013	0.25%	4.39%
A 2014	0.14%	4.15%
A 2015	0.13%	3.96%
A 2016	0.40%	3.71%
F 2017	**0.78%**	**3.49%**
F 2018	**1.20%**	**3.25%**
F 2019	**1.93%**	**3.02%**



Interest rates on STIP and TFIP investments have come down considerably in the past ten years. In FY 2007, both the STIP and TFIP annual rates of return were above 5%. STIP rates came down sharply in the following years while TFIP rates moved down more gradually. Short-term rates across the economy declined as the Federal Open Market Committee (FOMC) instituted unprecedented monetary easing in response to rapidly deteriorating economic conditions that began in 2008. The FOMC slashed the target level of the federal funds rate to near zero in 2009 in an effort to stimulate the economy. The federal funds rate is the interest rate banks receive on overnight loans that are used to meet daily reserve requirements. This benchmark short-term interest rate remained in the range of 0% - 0.25% for seven years until moving

up slightly in December 2015. The interest rate on STIP investments generally moves in line with the federal funds rate, and so is sensitive to changes in Federal Reserve monetary policy. Currently, the Federal Reserve is closely monitoring economic conditions as it attempts to return to monetary policy normalization. The economic climate in late 2015 was deemed strong enough by the Fed to warrant a hike in the target federal funds rate by half of a percentage point. At that time, the Fed was predicting a path for monetary policy that included three or four more rate increases in 2016. However, financial market turmoil, weak national job readings, persistent low inflation, and Britain's decision to leave the European Union derailed the Fed's 2016 plans, and the target federal funds rate remains in the 0.25% - 0.5% range. Over the forecast period the STIP rate of return rises steadily based on expectations of further action by the Fed to bring short-term interest rates up from their historically low levels.

The TFIP rate of return has followed a decreasing trend since FY 2007. This trend evolved as relatively high yield securities matured and were replaced in the asset pool by lower-yielding securities. The TFIP is primarily invested in medium to long-term investment grade assets, which are comprised of securities that are generally viewed as safe from default. During the economic downturn and in the years since, yields on these safe assets plummeted. The combination of shrinking supply and soaring demand bid up safe asset prices, consequently reducing yields. US Treasury securities are yielding historically low rates of return, but have been climbing recently (e.g. the 10-year yield surged above 2% in the days following the presidential election). Low yields on US government debt flow through to influence yields on investment grade corporate bonds and other similar assets. As long as safe asset yields remain in their current range, the TFIP rate of return will continue to decline, and is expected to do so over the forecast period. Improving economic conditions will help boost safe asset yields, but the response of TFIP interest earnings will be lagged due to the long-term nature of the investments in the pool.

Risks and Significant Factors

- The economic health of the US economy is important. Continued movement toward full employment and rising measures of inflation will help push interest rates higher. Unimpressive economic data or an outright recession will keep a lid on rising interest rates.
- The FOMC's interpretation of economic conditions will determine their path forward regarding target levels of the federal funds rate. Both forward guidance and actual rate increases will influence STIP interest earnings over the forecast period. At this point, multiple rate hikes seem possible in the near term.
- Changes in the supply and demand of safe assets will be linked to the realized rate of return for the TFIP. Both domestic and global factors will influence the safe asset market in the years to come. Risk appetites of private investors do and will continue to play a large role in shaping the demand for these investment grade securities.
- Stock market volatility can affect both short-term and long-term interest rates. Heightened volatility can shift investment demand away from equities and toward safer securities.

Forecast Methodology

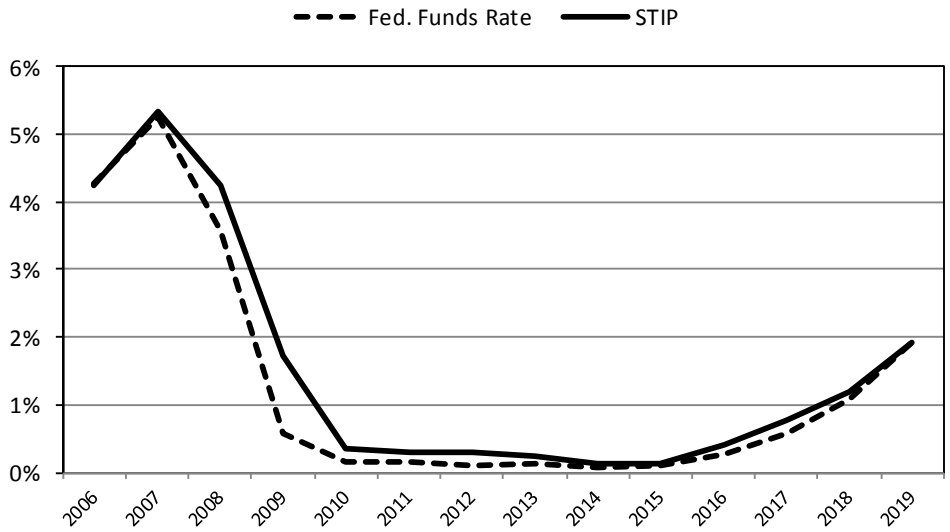
Short Term Investment Pool

The series to be modeled consists of quarterly observations of the annual rate of return on STIP investments. STIP rates are modeled using an autoregressive integrated moving average (ARIMA) model that includes observations of the federal funds rate as an explanatory variable. Historically, the STIP rate of return has tracked the federal funds rate closely. Including the federal funds rate variable allows the model to capture information about national short-term interest rates as well as the overall health of the economy. The model uses the first-difference approach to correct for nonstationary data. The first-differencing technique transforms the model data so that important statistical properties such as mean and variance are constant over time. Data with consistent statistical properties are easier to model and forecast than data that exhibit properties such as non-constant mean or variance. To account for lingering autocorrelation in the STIP yield series, the model contains an autoregressive component so that important information contained in past values of STIP yields is included. The model predicts that STIP rates will follow the federal funds rate upward over the forecast period as the Federal Reserve pursues its goal of monetary policy normalization.

Table 2 shows actual values for the annual STIP rate and federal funds rate for FY 2006 through FY 2016 and forecast values for FY 2017 through FY 2019.

Table 2
STIP and Federal Funds Rates of Return
FY 2006 Through FY 2019

Fiscal Year	Fed. Funds Rate	STIP
A 2006	4.29%	4.25%
A 2007	5.25%	5.34%
A 2008	3.57%	4.24%
A 2009	0.58%	1.73%
A 2010	0.15%	0.34%
A 2011	0.16%	0.31%
A 2012	0.10%	0.30%
A 2013	0.14%	0.25%
A 2014	0.08%	0.14%
A 2015	0.11%	0.13%
A 2016	0.26%	0.40%
F 2017	**0.57%**	**0.78%**
F 2018	**1.09%**	**1.20%**
F 2019	**1.91%**	**1.93%**



Trust Fund Investment Pool

Quarterly observations of the annual rate of return for the TFIP are forecast using a simple time series model. Over time, TFIP rates of return have displayed a general downward trend, and variation around that trend has fluctuated in magnitude over the course of the sample period. To accurately model the raw level of the series requires use of a model that can account for the autocorrelation and shifting variance present in the data. By transforming the series with a first-difference, certain problematic statistical characteristics of the original series are eliminated, allowing for use of a simpler model to estimate and forecast TFIP rates of return. The first-differencing approach is achieved by use of a random walk model. A special case of the random walk model is applied to the TFIP data in order to capture the historical downward drift in the series. The model estimates the average change in the level of the series and uses this parameter to forecast the series forward by adding the predicted change to the previous observation of the level of the series. As a result, forecast values of the series always move forward on a consistent path. With market interest rates on investment grade assets still at historically low levels, TFIP rates of return are estimated to continue their gradual downward march over the forecast period.

Data Sources

The State Street Bank and BOI provide monthly reports on STIP and TFIP investment earnings and balances. Federal funds rate data are from IHS Markit.

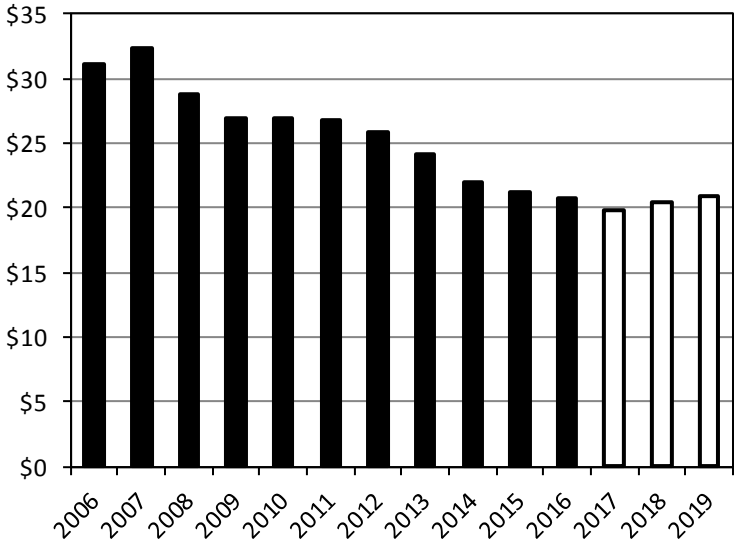
Revenue Description

Article IX, Section 5, of the Montana Constitution established the coal severance tax trust fund. The principle of this trust fund is inviolate unless acted upon by a three-fourths vote of the legislature. Under current law, 50% of the severance tax revenue from coal production in Montana is deposited into the trust fund and is dispersed among various sub-trusts. The individual trust funds are described in more detail in the *Introduction to the Coal Trust Fund* section. The largest fund within the coal tax trust fund is the coal tax permanent fund (permanent fund). Interest earnings from the permanent fund are allocated to the general fund.

Table 1 shows actual interest earnings deposited into the general fund from the coal tax trust fund from FY 2006 through FY 2016 and the forecast amounts for FY 2017 through FY 2019. The amounts in Table 1 include interest earnings from the permanent fund as well as the coal tax bond fund (which has as its balance sufficient funds to meet all principle and interest payments on coal severance tax bonds in a fiscal year), and other income minus expenses.

Table 1
Coal Trust Interest Earnings
($ millions)

	Year	Fund	Change
A	2006	$31.106	-15.36%
A	2007	$32.335	3.95%
A	2008	$28.855	-10.76%
A	2009	$26.958	-6.57%
A	2010	$26.914	-0.16%
A	2011	$26.783	-0.49%
A	2012	$25.840	-3.52%
A	2013	$24.153	-6.53%
A	2014	$21.996	-8.93%
A	2015	$21.168	-3.76%
A	2016	$20.722	-2.11%
F	**2017**	**$19.893**	**-4.00%**
F	**2018**	**$20.451**	**2.80%**
F	**2019**	**$20.955**	**2.46%**



Since FY 2007, permanent fund interest earnings deposited to the general fund have decreased every year. The rate of decline was less than one percent from FY 2009 to FY 2011, then rose in FY 2012 and accelerated through FY 2014 until starting to flatten back out in FY 2015 and FY 2016.

Declining interest earnings over the historical period reflect the impact of the Great Recession on financial markets. Bond yields dropped during the economic downturn and have remained low in the post-recessionary period. As a result, the rate of return of the trust fund investment pool (TFIP) – the primary investment pool of the permanent fund – has been falling as higher-yield bonds mature and are replaced with lower-yield bonds. Even as the economy improves and bond yields rise, increases in permanent fund earnings will lag behind until the lower-yield bonds mature and higher-yield bonds take their place. This means current economic conditions are not necessarily indicative of where interest earnings will be in the short term. As such, permanent fund earnings from TFIP investments are expected to continue to decline throughout the forecast period as low-yield bonds keep downward pressure on TFIP rates of return.

A change in the distribution of coal severance tax revenue to the coal trust funds that took effect at the start of FY 2017 is expected to lift the total balance of the permanent fund. Two funds, the treasure state endowment (TSE) fund and the treasure state regional water system (TSRWS) fund, stopped receiving coal severance tax revenue beginning in FY 2017.

The revenue previously allocated to the TSE and TSRWS funds will be deposited into the coal severance tax permanent fund.

The Montana Board of Investments (BOI) distributes permanent fund dollars across three main investment pools: the TFIP, the short term investment pool (STIP), and loans. The permanent fund balance is generally invested 60%-80% in the TFIP, 20%-40% in loans, and 2%-3 % in the STIP. Loan balances and TFIP balances tend to move in the opposite direction of one another. The TFIP balance is used to fund loan issuances, and as loans are paid back, the money is invested in the TFIP if it is not recycled back into more loans. Looking forward, loan balances are expected to grow substantially in FY 2017 and then level off in FY 2018 and FY 2019. The TFIP balance is expected to decline in the first year of the forecast period due to TFIP funds being moved into loan assets. As the balance of loans levels out, the TFIP balance rises in FY 2018 and FY 2019 as new money deposited into the permanent fund is invested in TFIP assets. Overall, coal trust interest earnings are predicted to decline further in FY 2017 and then experience growth in FY 2018 and FY 2019.

Risks and Significant Factors

- Actions by the Federal Open Market Committee (FOMC) regarding the target federal funds rate will affect short-term investment pool (STIP) earnings from the permanent fund. The FOMC is expected to raise the target rate near the end of CY 2016 and then proceed with cautious, gradual increases thereafter. Income from STIP investments is a small portion of permanent fund earnings, so increases in the STIP rate of return will have little impact on total revenue.
- Interest earnings from the permanent fund are largely driven by the rate of return on long-term investments held in the fund. National economic health is a significant determinant of long-term interest rates. Sluggish economic growth since the Great Recession has kept long-term interest rates muted, leading to a large collection of relatively low-yield investments in the permanent fund. Long-term rates will rise should the economy gain momentum, but are also at risk of retreating if economic growth sputters.

Forecast Methodology

There are three main steps taken to determine total interest income deposited to the general fund from the coal tax trust fund. These steps are detailed below and include estimating future balances and interest rates for each of the three investment pools (TFIP, STIP, and loans), determining annual interest income from each pool, and adding in estimated income from other sources and subtracting out expenses.

Step 1. Forecast balances and interest rates for TFIP investments, STIP investments, and loans.

TFIP: The balance of TFIP investments is projected to decrease through FY 2017 and then grow steadily in FY 2018 and FY 2019 as the permanent fund distribution from coal severance tax is invested in the TFIP. The initial decline in the TFIP balance is estimated to be the result of an increasing loan balance during the same time period (BOI will have to reduce the amount of TFIP investments in order to allow for the issuance of more loans). The interest rate on TFIP investments is forecast to decline through FY 2019. Relatively high-yield assets are still being replaced with lower-yielding counterparts, which continues to drag down the overall rate of return for this investment pool.

STIP: The STIP investment balance is estimated to remain stable from FY 2017 - FY 2019. Interest rates on STIP investments are projected to rise through FY 2019 as the Federal Reserve pursues a path of monetary policy normalization.

Loans: The loan balance is forecast to rise through FY 2017 and then level off in FY 2018 and FY 2019. Increased demand for permanent fund loans leads the balance higher. Loan interest rates are projected to remain relatively stable throughout the forecast period.

Step 2. Forecast interest rates for each investment pool are applied to their respective balances to determine annual income. TFIP income, STIP income, and loan income are summed for each year in the forecast period to determine total permanent fund interest income.

Step 3. Other income and administrative expenses are then estimated and added to total interest income to determine total coal trust revenue.

Table 2 shows the annual average balance, rate of return, and income for each investment category, and the permanent fund as a whole for FY 2014 through FY 2016, and forecast values for FY 2017 through FY 2019.

Table 2
Coal Trust Interest Income
($ millions)

Loan Income				TFIP Income			
Fiscal Year	Balance	Interest Rate	Income	Fiscal Year	Balance	Interest Rate	Income
A 2014	$118.521	4.87%	$5.766	A 2014	$391.442	4.14%	$16.221
A 2015	$113.584	4.62%	$5.248	A 2015	$385.211	3.99%	$15.360
A 2016	$118.063	3.76%	$4.441	A 2016	$366.401	3.87%	$14.171
F 2017	**$153.169**	**4.56%**	**$6.984**	**F 2017**	**$343.142**	**3.64%**	**$12.505**
F 2018	**$181.457**	**4.57%**	**$8.294**	**F 2018**	**$334.085**	**3.50%**	**$11.705**
F 2019	**$184.233**	**4.59%**	**$8.460**	**F 2019**	**$351.063**	**3.41%**	**$11.980**

STIP Income				Trust Fund Total			
Fiscal Year	Balance	Interest Rate	Income	Fiscal Year	Balance	Interest Rate	Income
A 2014	$5.886	0.15%	$0.009	A 2014	$515.848	4.26%	$21.996
A 2015	$10.479	0.14%	$0.015	A 2015	$509.274	4.05%	$20.623
A 2016	$13.084	0.40%	$0.052	A 2016	$497.548	3.75%	$18.665
F 2017	**$11.477**	**0.73%**	**$0.083**	**F 2017**	**$507.788**	**3.85%**	**$19.572**
F 2018	**$11.617**	**1.23%**	**$0.143**	**F 2018**	**$527.159**	**3.82%**	**$20.142**
F 2019	**$11.757**	**1.82%**	**$0.214**	**F 2019**	**$547.052**	**3.78%**	**$20.653**

Table 3 shows actual administrative expenses, other income, and interest income for FY 2012 through FY 2016 and forecast amounts for FY 2017 through FY 2019. The last column shows the total revenue from the coal severance tax trust fund that is deposited into the general fund.

Table 3
Coal Trust Total General Fund Revenue
($ millions)

Fiscal Year	Interest Income		Capital Gain		Other Income		Admin. Expense		Total Revenue
A 2012	$26.207	+	$0.000	+	$0.114	+	($0.482)	=	$25.840
A 2013	$23.822	+	$0.000	+	$0.731	+	($0.400)	=	$24.153
A 2014	$21.996	+	$0.000	+	$0.430	+	($0.431)	=	$21.996
A 2015	$20.623	+	$0.000	+	$0.975	+	($0.430)	=	$21.168
A 2016	$18.665	+	$0.000	+	$2.593	+	($0.535)	=	$20.722
F 2017	**$19.572**	+	**$0.000**	+	**$0.770**	+	**($0.449)**	=	**$19.893**
F 2018	**$20.142**	+	**$0.000**	+	**$0.770**	+	**($0.461)**	=	**$20.451**
F 2019	**$20.653**	+	**$0.000**	+	**$0.770**	+	**($0.469)**	=	**$20.955**

Occasionally, permanent fund TFIP shares are sold. An example of this is the shares sold to finance the Big Sky economic development fund transfer in FY 2005. About 186,000 shares were sold for a capital gain of $0.86 million. No capital gains are forecast for FY 2017 through FY 2019.

Other income is derived primarily from the following two sources: 1) interest earned on a bond fund that provides debt security for coal severance tax bonds; and 2) interest earned on the short-term investment of the coal tax income fund, which comes from the deposit of interest earnings from both the permanent fund and the bond fund into the coal tax income fund. Although the balance of the coal tax income fund is swept monthly into the general fund, it is invested in STIP during the interim. The income from this investment is returned to the income fund before being deposited into the general fund.

Data Sources

The State Street Bank and BOI provide monthly reports on the trust fund balances and income. Fiscal year end revenues and administrative expenses were obtained from SABHRS.

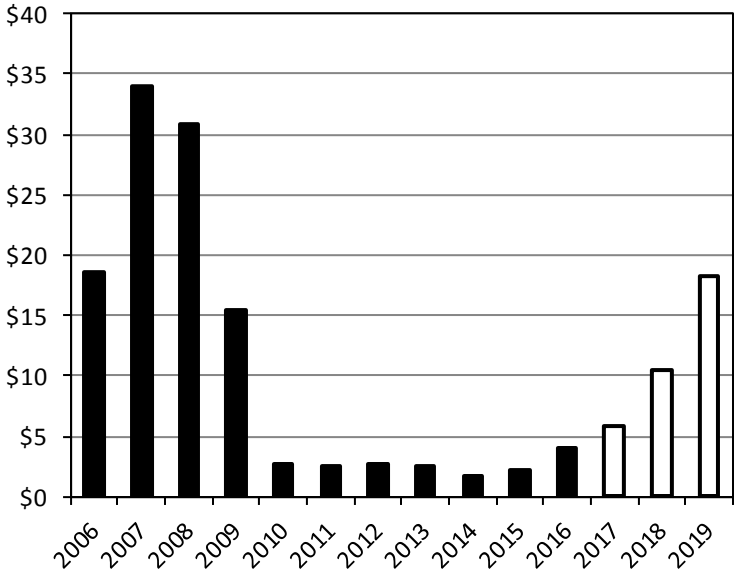
Revenue Description

Section 17-6-202(2), MCA, establishes the treasury cash account (TCA). According to the law, securities and cash in all treasury fund accounts that are not designated to specific sources are to be pooled in the TCA to be managed by the Montana Board of Investments (BOI). Included in the TCA are general fund cash balances. The interest earnings from the investment of TCA funds are deposited into the general fund.

Table 1 shows general fund revenue from TCA interest earnings for FY 2006 though FY 2016 and projected revenues for FY 2017 through FY 2019.

Table 1
Treasury Cash Account Interest
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$18.631	85.05%
A	2007	$33.951	82.23%
A	2008	$30.783	-9.33%
A	2009	$15.507	-49.62%
A	2010	$2.692	-82.64%
A	2011	$2.519	-6.44%
A	2012	$2.653	5.31%
A	2013	$2.465	-7.09%
A	2014	$1.756	-28.74%
A	2015	$2.164	23.24%
A	2016	$3.961	83.01%
F	**2017**	**$5.802**	**46.48%**
F	**2018**	**$10.487**	**80.76%**
F	**2019**	**$18.286**	**74.37%**



General fund revenue from TCA interest earnings is subject to a high degree of volatility due to the short-term nature of TCA investments. The TCA prominently features short-term investments because the account needs to maintain a certain degree of liquidity to ensure the availability of funds for expenditure. The TCA's relatively high exposure to short-term interest rate risk has caused dramatic changes in the account's earnings over the past decade.

Between FY 2006 and FY 2016, TCA revenue ranged from a high of $33.9 million in FY 2007 to a low of $1.7 million in FY 2014. Relatively high short-term interest rates in FY 2007 and FY 2008 supported strong earnings in those years. The onset of the Great Recession in FY 2008, however, choked out economic activity and created financial turmoil. As a result, interest rates plummeted, with short-term benchmark rates such as the federal funds rate and the London Interbank Offered Rate (LIBOR) reaching levels near zero in FY 2009. Rates of return on the BOI's short-term investment pool (STIP) closely track the aforementioned benchmark interest rates and so experienced a similar rapid decline. The extended period of near-zero levels of short-term interest rates since the end of the Great Recession has resulted in historically low rates of return for STIP investments. The TCA is invested heavily in the STIP, so the pool's rate of return has a large influence on TCA revenue. Advances in benchmark short-term interest rates in the last year have led STIP rates of return higher, as evidenced by the 83% jump in TCA general fund revenue in FY 2016. The Federal Reserve is expected to pursue further increases to the target federal funds rate in FY 2017 and beyond, which should manifest in higher interest earnings from TCA STIP investments. There is an approximate 45-day lag between a change in market short-term interest rates and a change in the STIP interest rate.

Along with STIP, money in the TCA is also invested to a lesser degree in short/medium-term bonds. These bond investments are constrained to securities with maturities of three years or less for liquidity purposes. Interest rates on TCA bond investments also dropped significantly in the wake of the recession, and have only shown slight upward movement over the past couple years. Assuming benchmark short-term interest rates continue to rise, the rate on short/medium-term bonds is expected to trend upward as well. Bonds currently held in the TCA will mature and be replaced with higher-yielding versions.

Up until FY 2017, TCA investments included a cash balance that was held in an overnight bank sweep account. Money invested in this manner earned minimal interest, but was highly liquid. The BOI did away with the cash sweep account investment strategy at the start of FY 2017, instead opting to hold short-term treasury securities that offer a higher rate of return, yet still maintain the necessary level of liquidity.

Risks and Significant Factors

- Since the STIP rate of return is tied closely to benchmark short-term market interest rates such as the federal funds rate and the LIBOR, monetary policy decisions that influence these rates will have a large effect on TCA revenue because of the account's high exposure to STIP investments.
- The balance of funds in the TCA has an impact on interest earnings generated from the account. Lower balances tend to correlate with lower earnings and vice versa. This is not always the case if interest rates are high (low) enough to offset lower (higher) asset balances. The general fund cash balance has been trending downward the last couple of years, pulling the TCA balance down with it. Swings in the general fund cash balance during the forecast period will heavily influence the balance of funds in the TCA available for investment.
- Bonds return a relatively higher yield than STIP assets because they are a longer-term investment. The allocation of funds between STIP investments and bond investments in the years to come will have an impact on total TCA interest earnings.

Forecast Methodology

The amount of total TCA interest income deposited to the general fund is determined in three main steps. Details for each step of the estimation process are given below.

Step 1. Estimate the balance of funds in each investment pool within the TCA and the respective rate of return.

STIP: The balance of STIP investments is projected to decrease in FY 2017 due to a declining general fund cash balance, and then rise in FY 2018 and FY 2019 as the general fund cash balance increases. Interest rates on STIP assets are estimated to increase in each year of the forecast period due to improving economic conditions and the response by major monetary institutions to increase target levels of key benchmark short-term interest rates.

Bonds: The TCA bond balance is forecast to remain relatively flat in FY 2017, increase in FY 2018 and then level off in FY 2019. BOI's new investment strategy of holding short-term treasury securities instead of cash in sweep accounts leads the TCA bond balance higher. Bond interest rates are projected to rise alongside short-term interest rates throughout the forecast period.

Step 2. Estimated interest rates for each investment pool in the TCA are applied to their respective balances to determine annual interest income from each asset class. STIP income and bond income are added together to come up with total TCA gross investment income.

Step 3. Estimated expenses are subtracted from gross income and the resulting net income represents the amount to be transferred to the general fund.

Table 2 shows the average annual balance, rate of return, and interest income for STIP assets, bond assets, and the account total for FY 2012 to FY 2016, along with forecast amounts for FY 2017 through FY 2019.

Table 2
TCA Balances & Rates of Return by Investment Type
($ millions)

	STIP			Medium Term Bonds			TCA Total		
Fiscal Year	Balance	Interest Rate	Income	Balance	Interest Rate	Income	Balance	Interest Rate	Income
A 2012	$828.31	0.29%	$2.41	$38.43	2.00%	$0.77	$866.73	0.37%	$3.18
A 2013	$942.41	0.24%	$2.30	$26.44	2.42%	$0.64	$968.85	0.30%	$2.94
A 2014	$934.73	0.14%	$1.32	$44.72	0.52%	$0.23	$979.44	0.16%	$1.55
A 2015	$820.64	0.13%	$1.09	$116.36	0.74%	$0.86	$937.00	0.21%	$1.95
A 2016	$667.74	0.40%	$2.64	$139.49	0.82%	$1.15	$807.23	0.47%	$3.78
F 2017	**$589.97**	**0.75%**	**$4.40**	**$136.92**	**1.06%**	**$1.45**	**$726.90**	**0.80%**	**$5.85**
F 2018	**$649.55**	**1.24%**	**$8.06**	**$157.59**	**1.57%**	**$2.47**	**$807.14**	**1.31%**	**$10.54**
F 2019	**$787.11**	**1.85%**	**$14.54**	**$157.74**	**2.41%**	**$3.80**	**$944.85**	**1.94%**	**$18.33**

Table 3 shows the administrative expenses associated with the TCA for FY 2012 to FY 2016 and estimated expenses for FY 2017 through FY 2019. Future expenses are assumed to be the same as the past year's expenses.

Table 3
Net TCA Income
($ millions)

Fiscal Year	Gross Income		Expenses		Net Income
A 2012	$2.67	+	($0.02)	=	$2.65
A 2013	$2.48	+	($0.01)	=	$2.46
A 2014	$1.78	+	($0.02)	=	$1.76
A 2015	$2.21	+	($0.04)	=	$2.16
A 2016	$4.01	+	($0.05)	=	$3.96
F 2017	**$5.85**	**+**	**($0.05)**	**=**	**$5.80**
F 2018	**$10.54**	**+**	**($0.05)**	**=**	**$10.49**
F 2019	**$18.33**	**+**	**($0.05)**	**=**	**$18.29**

Data Sources

Data were obtained from SABHRS, the State Street Bank, the BOI, and the Department of Administration.

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

ALCOHOL REVENUE
SECTION 6

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

Liquor Excise and License Tax

2019 Biennium

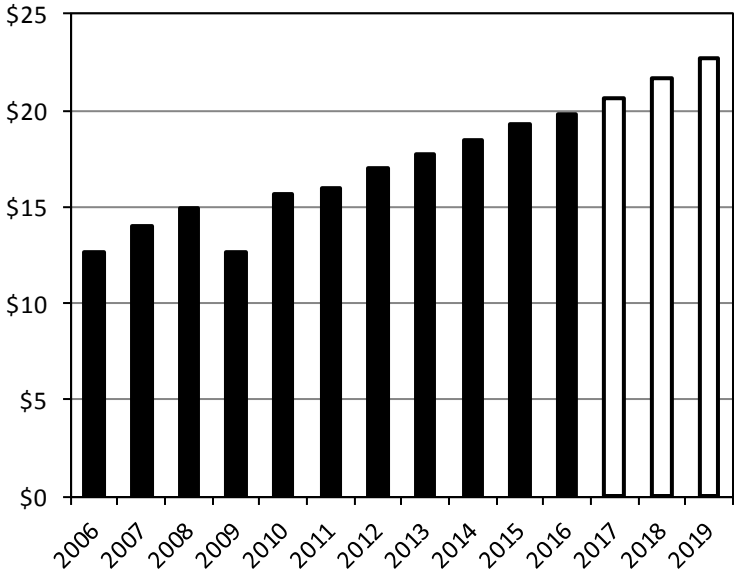
Revenue Description

According to 16-1-401 and 16-1-404, MCA, the Department of Revenue is directed to collect an ***excise*** tax of 16% and a ***license*** tax of 10% of the retail selling price on all liquor sold and delivered in the state and manufactured by distillers producing 200,000 or more proof gallons of alcohol annually. Both the excise and license tax rates are smaller for distillers that produce less than 200,000 proof gallons of alcohol. Currently, the majority of the distilled spirits sold in the state of Montana are acquired from vendors that produce more than 200,000 proof gallons annually.

Section 16-1-404, MCA, states that 65.5% of the liquor ***license*** tax is deposited to the Department of Public Health and Human Services (DPHHS) to fund treatment, rehabilitation, and prevention of alcoholism and chemical dependency. Three Indian tribes have an agreement with the state and a portion of the remaining revenue from both the excise and license tax is shared with tribes that have a revenue sharing agreement with the state. The remaining revenue is deposited to the general fund.

Table 1
Liquor Excise and License Taxes
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$12.709	10.82%
A 2007	$13.982	10.01%
A 2008	$14.925	6.75%
A 2009	$12.651	-15.24%
A 2010	$15.626	23.52%
A 2011	$15.989	2.33%
A 2012	$17.037	6.55%
A 2013	$17.724	4.03%
A 2014	$18.418	3.92%
A 2015	$19.257	4.56%
A 2016	$19.776	2.69%
F 2017	**$20.596**	**4.15%**
F 2018	**$21.677**	**5.25%**
F 2019	**$22.683**	**4.64%**



Risk and Significant Factors

- Liquor bottles sold experienced an average annual increase of 3.67% between FY 2011 and FY 2016.
- Cost per liquor bottle sold experienced an average annual increase of 0.91% between FY 2011 and FY 2016.
- The Fort Peck, Fort Belknap, Flathead, and Blackfeet Indian Reservations have a revenue sharing agreement with the state. The revenue sharing agreement distributes revenues to the tribes based on the per capita general fund revenue multiplied by the number of enrolled tribal members. Tribal revenue is estimated to be 2.61% of the non-DPHHS liquor revenue for FY 2017 through FY 2019.

Forecast Methodology

The general fund share of the liquor excise and license tax is prepared in five steps:

Step 1. Calculate gross sales.

Step 2. Calculate retail selling value.

Step 3. Calculate gross liquor excise and license tax collections.

Step 4. Calculate tribal portion of revenue.

Step 5. Calculate liquor excise and license tax general fund revenue.

Distribution

Table 2 shows liquor license tax is first distributed to DPHHS, and then revenue from the liquor excise tax is added. Finally, tribal revenues are subtracted to obtain general fund revenue.

Table 2
Liquor Excise and License Tax Revenue Allocation

Description	Actual FY 2016	Projected FY 2017	Projected FY 2018	Projected FY 2019
Liquor License Tax	$10,439,266	$10,868,172 $	11,438,241 $	11,969,155
Less DPHHS Share (65.5%)	$6,837,719 $	7,118,653 $	7,492,048 $	7,839,796
	$3,601,547 $	3,749,519 $	3,946,193 $	4,129,358
Liquor Excise Tax	$16,690,740	$17,384,646 $	18,296,524 $	19,145,769
Non DPHHS Liquor Tax Revenue	$20,292,287	$21,134,166 $	22,242,717 $	23,275,128
Less Tribal Share (2.61%)	$516,561	$537,939 $5	66,156 $5	92,434
General Fund Revenue	**$19,775,726**	**$20,596,227 $**	**21,676,561 $**	**22,682,694**

Data Sources

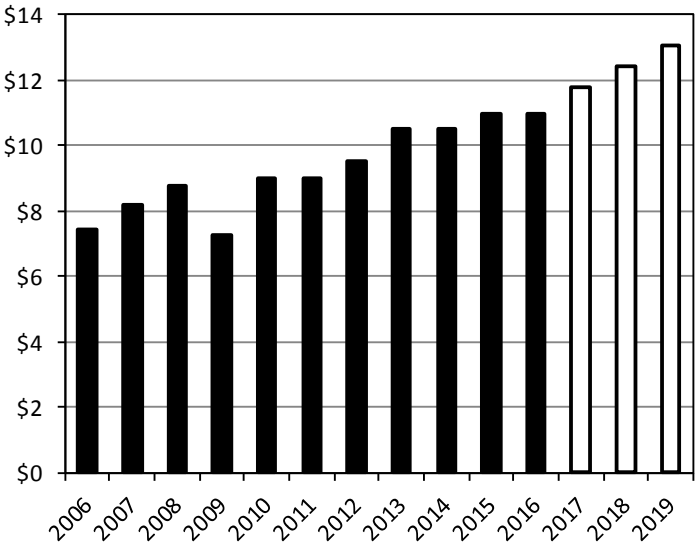
Data is from the Department of Revenue monthly cost of sales report, the Department of Revenue Liquor Distribution annual financial schedules, and SABHRS.

Revenue Description

Title 16, chapters 1 through 6, MCA, directs the Department of Revenue to administer liquor laws relating to alcoholic beverage control, sale, distribution, and the licensing of alcoholic beverage manufacturers, wholesalers, and retailers. Agency franchisees purchase liquor products from the state liquor warehouse. A 40.5% markup on the state's base costs covers the operating costs of the state liquor system and provides a net profit. All liquor profit net revenue is transferred to the general fund at fiscal year end.

Table 1
Liquor Profits
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$7.450	12.03%
A	2007	$8.200	10.07%
A	2008	$8.775	7.01%
A	2009	$7.250	-17.38%
A	2010	$9.000	24.14%
A	2011	$9.000	0.00%
A	2012	$9.500	5.56%
A	2013	$10.500	10.53%
A	2014	$10.500	0.00%
A	2015	$11.000	4.76%
A	2016	$11.000	0.00%
F	**2017**	**$11.777**	**7.06%**
F	**2018**	**$12.435**	**5.59%**
F	**2019**	**$13.085**	**5.22%**



The state privatized liquor retailing operations in FY 1996. Liquor profit transfers to the general fund have gradually increased since that time. The decreased general fund transfer in FY 2009 is attributable to a one-time transfer of $1.75 million for renovation of the State Liquor Warehouse, approved in HB 5 by the 2009 Legislature. The 2015 Legislature passed SB 193, which increased the state markup from 40.0% to 40.5%, and created a new methodology for calculating agency liquor store discount rates.

Risks and Significant Factors

- Liquor gross sales have experienced an average annual increase of 5.94% between FY 2004 and FY 2014.
- Sale commissions and discounts were, historically, paid to store owners by the state of Montana in the form of a cost reduction for purchases. Following privatization in 1996, commission rates were determined by a bidding process for stores in communities with populations over 3,000, and a proposal process for stores in communities with a population under 3,000. Commission rates were reviewed and adjusted up to average every three years.
- Traditional discount and commission rates were eliminated with the passage of SB 193 (2015 session). The new discount rate is based on the agency liquor store's prior calendar year liquor purchases. The new rate for an agency liquor store will fall into one of ten commissions ranging from 16% for stores that purchased less than $250,000, to 12.15% for those stores that purchased more than $7 million. The purchase thresholds will be adjusted annually based on the consumer price index for the prior calendar year.

Forecast Methodology

The liquor profit transfer to the general fund is based on the net income from liquor operations for the fiscal year.

Step 1. Net income from liquor operations is calculated as gross liquor sales less the cost of goods sold, liquor taxes (liquor excise tax and liquor license tax), combined commissions/discounts, and liquor operating expenses.

Step 2. The calculations for gross liquor sales, cost of goods sold, and liquor taxes are ascertained through the process of forecasting Liquor Excise and License Tax General Fund Revenue.

Table 2 summarizes the calculations of commissions, discounts, operating expenses, and profits.

Distributions

Table 2 shows the actual liquor profit transfer for FY 2016 and projections for FY 2017 through FY 2019. Gross liquor sales are added to a small amount of other revenue. The profits are then adjusted for the changes to the net assets of the Liquor Control Division, and the remainder is transferred to the general fund.

Table 2
Distribution of Forecast Liquor Profits
($ millions)

Fiscal Year	Gross Sales		License Fees/Other Revenue		Commissions		Discounts		Cost of Goods Sold		Liquor Taxes		Operating Expenses		Profit		Change in Net Assets		Transfer to Genral Fund	Percent Change
A 2016	$134.650	+	$0.838	-	$0.000	-	$17.518	-	$76.821	-	$26.949	-	$3.003	▶	$11.198	-	$0.198	=	$11.000	0.00%
F 2017	**$138.020**	**+**	**$0.896**	**-**	**$0.000**	**-**	**$16.700**	**-**	**$78.368**	**-**	**$28.269**	**-**	**$3.187**	**▶**	**$12.391**	**-**	**$0.615**	**=**	**$11.777**	**7.06%**
F 2018	**$145.260**	**+**	**$0.896**	**-**	**$0.000**	**-**	**$17.576**	**-**	**$82.479**	**-**	**$29.751**	**-**	**$3.265**	**▶**	**$13.084**	**-**	**$0.649**	**=**	**$12.435**	**5.59%**
F 2019	**$152.123**	**+**	**$0.903**	**-**	**$0.000**	**-**	**$18.407**	**-**	**$86.376**	**-**	**$31.131**	**-**	**$3.345**	**▶**	**$13.767**	**-**	**$0.683**	**=**	**$13.085**	**5.22%**

Data Sources

Gross liquor sales data and other related data comes from the Department of Revenue Liquor Services Division Annual Financial Report. Other data is from SABHRS and IBARS.

Revenue Description

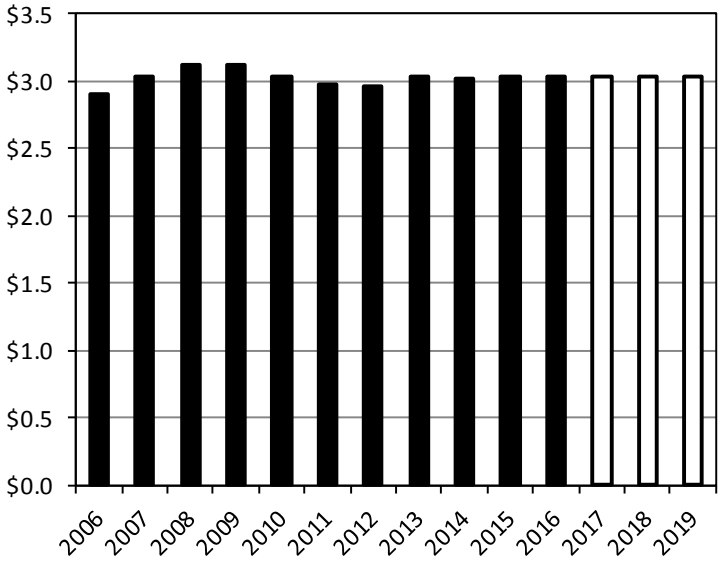
According to 16-1-406, MCA, the Department of Revenue is directed to collect a tax on each barrel (31 gallons) of beer sold in Montana by a wholesaler at the following rates:

Barrels Produced by a Brewer	Tax Rate Per Barrel
Less than or equal to 5,000	$1.30
5,001 to 10,000	$2.30
10,001 to 20,000	$3.30
Greater than 20,000	$4.30

From total beer tax revenue, 76.77% is distributed to the state general fund and 23.26% is distributed to the Department of Public Health and Human Services (DPHHS) to fund alcohol treatment programs. A small portion of the beer tax revenue allocated to the general fund (approximately 2.0%) is remitted to the Blackfeet, Flathead, Fort Peck, and Fort Belknap Reservations in compliance with revenue sharing agreements with the tribes.

Table 1
Beer Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$2.908	-0.99%
A	2007	$3.034	4.35%
A	2008	$3.124	2.97%
A	2009	$3.115	-0.30%
A	2010	$3.032	-2.66%
A	2011	$2.982	-1.65%
A	2012	$2.956	-0.86%
A	2013	$3.033	2.59%
A	2014	$3.023	-0.34%
A	2015	$3.034	0.39%
A	2016	$3.027	-0.23%
F	**2017**	**$3.029**	**0.05%**
F	**2018**	**$3.030**	**0.03%**
F	**2019**	**$3.028**	**-0.06%**



Risks and Significant Factors

- Per capita beer consumption decreased at an annual average of -0.33% between FY 2012 and FY 2016.
- The average tax rate per barrel decreased at an annual average of -0.80% between FY 2012 and FY 2016, due to an increased proportion of total barrel production by brewers producing less than 20,000 barrels annually, which are taxed at a lower rate.
- Montana population age 20 and over experienced an average annual increase of 1.1% between FY 2012 and FY 2016.
- Montana population age 20 and over was used for this forecast because, according to a statistical analysis, this demographic tracked total beer consumption over time better than changes in other age demographics such as total population, the population between 30 and 60 years old, etc.
- Tribal revenue is estimated to be 1.97% of the non DPHHS beer revenue for FY 2017 through FY 2019.

Forecast Methodology

The general fund share of the beer tax is prepared in three steps:

Step 1. Calculate per capita consumption of beer.

Step 2. Total revenue is projected by multiplying the number of barrels sold by the average tax rate per barrel.

Step 3. Total revenue is allocated to the general fund, DPHHS, and the tribes, per the revenue sharing agreements.

Distribution

Table 2 shows the actual allocation for FY 2016 and the projected allocation of beer tax revenue to the general fund, DPHHS, and the tribes for FY 2017 through FY 2019. DPHHS revenue allocation is subtracted from total beer tax revenue to obtain total general fund and tribe share. Tribe share is then calculated and subtracted to obtain estimated beer tax revenue for the general fund.

Table 2
Beer Tax Revenue Allocation
($ Millions)

Description	FY 2016	FY 2017	FY 2018	FY 2019
Total Revenue	$ 4.049	$ 4.051	$ 4.052	$ 4.050
Less DPHHS Share (23.26%)	$ 0.942	$ 0.942	$ 0.943	$ 0.942
General Fund and Tribes' Share	$ 3.107	$ 3.109	$ 3.110	$ 3.108
Less Tribes' Share (1.97%)	$ 0.080	$ 0.080	$ 0.080	$ 0.080
General Fund	**$ 3.027**	**$ 3.029**	**$ 3.030**	**$ 3.028**

Data Sources

Department of Revenue GENTAX reports provided historical information on the number of total production by producer type. SABHRS provided historical beer tax revenue and allocation information. IHS Market provided historical and projected Montana population data.

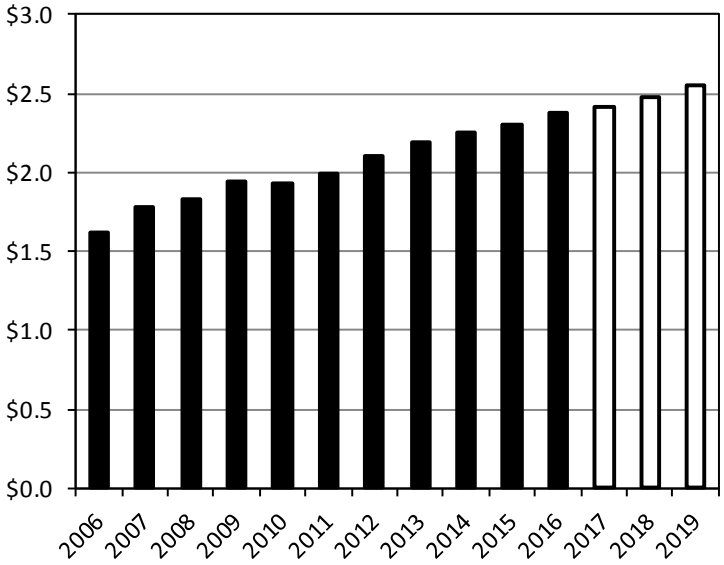
Revenue Description

According to 16-1-411, MCA, the Department of Revenue is directed to collect a tax of 27 cents on each literof table wine and 3.7 cents on each liter of hard cider imported by a distributor or the department. Additionally, a tax of 1 cent per liter of wine is levied on table wine sold by a table wine dealer to an agent, pursuant to 16-2-301, MCA.

Wine tax revenues are distributed 69% to the state general fund and 31% to the Department of Public Health and Human Services (DPHHS) for the treatment, rehabilitation, and prevention of alcoholism and chemical dependency. Approximately 2.6% of the wine tax revenue allocated to the general fund is remitted to the Blackfeet, Flathead, Fort Peck, and Fort Belknap Reservations in compliance with revenue sharing agreements with the tribes.

Table 1
Wine Tax
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$1.624	8.08%
A 2007	$1.775	9.29%
A 2008	$1.829	3.07%
A 2009	$1.936	5.84%
A 2010	$1.933	-0.17%
A 2011	$1.994	3.16%
A 2012	$2.104	5.55%
A 2013	$2.195	4.31%
A 2014	$2.250	2.52%
A 2015	$2.307	2.54%
A 2016	$2.373	2.86%
F 2017	**$2.412**	**1.61%**
F 2018	**$2.479**	**2.80%**
F 2019	**$2.547**	**2.71%**



This forecast projects the per capita consumption of wine in Montana will increase at an annual rate of 0.32 liters per person between FY 2017 and FY 2019.

Risks and Significant Factors

- Per capita consumption experienced an average annual increase of 1.8% between FY 2013 and FY 2016.
- Montana population age 20 and over was used for this forecast because, according to a statistical analysis, this demographic tracked total wine consumption over time better than changes in other age demographics such as total population or the population between 30 and 60 years old.
- Montana population age 20 and over experienced an average annual increase of 1.1% between FY 2013 and FY 2016.

Forecast Methodology

The general fund share of the wine tax is prepared in three steps:

Step 1. Estimate liters of per capita wine consumption for FY 2017 through FY 2019 using average per capita consumption growth from FY 2013 through FY 2016.

Step 2. Multiply the estimates of per capita consumption by population and the tax rate ($0.27/liter) to obtain estimates of total tax revenue through FY 2019.

Step 3. Determine the wine tax allocation to the general fund.

Distribution

Table 2 shows the actual allocation for FY 2016 and the projected allocation for FY 2017 through FY 2019. Of the total revenue, 31% is first distributed to the DPHHS. The tribal revenue allocation payment (2.57%) is then subtracted from the remaining revenue for FY 2017 through FY 2019. All revenue which remains after DPHHS and tribal payments have been subtracted is deposited to the general fund.

Table 2
Wine Tax Revenue Allocation
($ millions)

Description	FY 2016	FY 2017	FY 2018	FY 2019
Total Revenue	$3.527	$3.585	$3.686	$3.786
Less DPHHS Share (31%)	$1.093	$1.111	$1.143	$1.174
General Fund and Tribes' Share	$2.435	$2.474	$2.543	$2.612
Less Tribes' Share (2.57%)	$0.061	$0.062	$0.064	$0.066
General Fund*	**$2.373**	**$2.412**	**$2.479**	**$2.547**

Data Sources

Department of Revenue GENTAX reports provided historical information on the number of wine liters sold. SABHRS provided historical wine tax revenue and allocation information. IHS Markit provided historical and projected Montana population data.

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

TOBACCO REVENUE
SECTION 7

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

Cigarette Tax

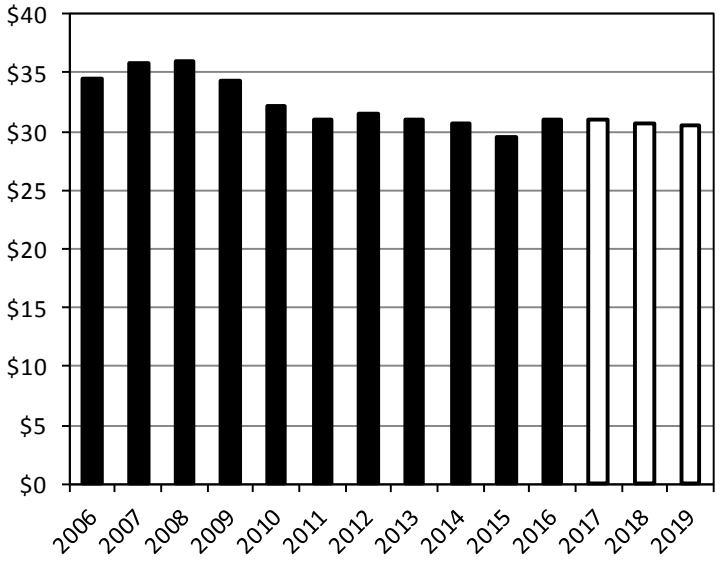
2019 Biennium

Revenue Description

According to 16-11-111, MCA, a specific tax of $1.70 is imposed on each pack of 20 cigarettes. If a pack contains more than 20 cigarettes, the tax is pro-rated by 1/20th of the $1.70 tax for each cigarette exceeding 20 cigarettes. Currently, revenue generated from the cigarette tax is distributed as follows: 45.1% to the general fund; 44.0% to the health and Medicaid initiatives account; 2.6% to the long-range building account; and the greater of 8.3% or $2 million for operation of state veterans' nursing homes.

Table 1
Cigarette Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$34.573	-1.55%
A	2007	$35.830	3.64%
A	2008	$36.004	0.49%
A	2009	$34.320	-4.68%
A	2010	$32.218	-6.13%
A	2011	$30.992	-3.81%
A	2012	$31.483	1.59%
A	2013	$31.011	-1.50%
A	2014	$30.623	-1.25%
A	2015	$29.604	-3.33%
A	2016	$31.103	5.06%
F	**2017**	**$30.980**	**-0.40%**
F	**2018**	**$30.767**	**-0.69%**
F	**2019**	**$30.532**	**-0.76%**



Beginning May 1, 2003, SB 407 (2003 session) increased the tax on cigarettes from $0.18 to $0.70 per pack. SB 407 also changed the distribution of cigarette taxes, increasing the general fund portion to 87.40%, the long-range building account to 4.3%, and the DPHHS portion to the greater of 8.3% or $2.0 million.

Initiative 149 (I-149) further increased the tax on each pack of cigarettes to $1.70 as of January 1, 2005. I-149 also changed the allocation of total collections as follows: 45.1% to the general fund; 44.0% to the health and Medicaid initiatives account; 2.6% to the long-range building account; and the greater of 8.3% or $2 million for operation of state veterans' nursing homes.

For FY 2010 through FY 2015, the general fund portion was reduced to 43.9% and 1.2% was designated for the Southwest Montana Veterans' Home. In FY 2016, the general fund distribution returned to 45.1%.

Risks and Significant Factors

- Per capita consumption experienced an average annual decrease of 1.92% between FY 2012 and FY 2016; however, consumption increased by 0.23% and 0.30% in FY 2012 and FY 2016 respectively.
- Montana population age 15 and over, which experienced an average annual increase of 0.96% between FY 2012 and FY 2016, was used for this forecast because, according to statistical analysis, this demographic tracked total cigarette consumption over time better than changes in other age demographics such as total population, the population between 30 and 60 years old, etc.

- Although national trends indicate an overall downward trend for cigarette consumption, the rate at which consumption declines is also declining. According to the Center for Disease Control, the national prevalence of cigarette smoking has resumed a slow decline after stalling for several years. This model assumes a 1.5% annual decrease in per capita consumption during the forecast period.
- There are three types of arrangements for cigarette taxes with the seven Indian reservations in Montana:
  1. Currently, no Indian reservations have a tax-free quota agreement with the state.
  2. The Flathead Reservation abides by the tax-free quota law with no specific agreement with the state.
  3. The Blackfeet, Fort Belknap, Rocky Boy, Fort Peck, Crow, and Northern Cheyenne Reservations have a revenue sharing agreement with the state.
- Tribes in categories 1 and 2 receive cigarettes tax free for the enrolled tribal members residing on the reservation. Under the revenue sharing agreements, the tribe and state cigarette tax rates are the same. The tribe's share of the tax revenue is 150% of the per capita cigarette tax collected for each of the tribes' enrolled members residing on the reservation.

Forecast Methodology

The general fund share of the cigarette tax is prepared in four steps:

Step 1. Estimate taxable per capita cigarette consumption.

Step 2. Estimate cigarette tax revenue.

Step 3. Calculate tribal revenue sharing agreement payments.

Step 4. Calculate distributable state cigarette tax revenue and allocation.

Distributions

Table 2 shows the actual allocation for FY 2016 and projected state cigarette tax revenue/allocation for FY 2017 through FY 2019. The tribes' revenue allocations are subtracted from the gross cigarette tax revenue to yield total state cigarette tax revenue. Revenue is allocated to each fund by multiplying state cigarette tax revenue by the fund's share.

Table 2
Distribution of Cigarette Tax Revenue
($ million)

Calculation	FY 2016	FY 2017	FY 2018	FY 2019
Gross Cigarette Tax Revenue	$73.219	**$72.706**	**$72.206**	**$71.655**
Subtract Tribal Payments	$4.254	**$4.014**	**$3.986**	**$3.956**
Total Distributable State Cigarette Tax Revenue	$68.965	**$68.692**	**$68.220**	**$67.699**
Allocation				
Health and Medicaid (44.0%)	$30.34	**$30.224**	**$30.017**	**$29.788**
Long Range Building Fund (2.6%)	$1.793	**$1.786**	**$1.774**	**$1.760**
State Veterans' Nursing Homes (8.3%)	$5.724	**$5.701**	**$5.662**	**$5.619**
General Fund 45.1%	$31.103	**$30.98**	**$30.767**	**$30.532**

Data Sources

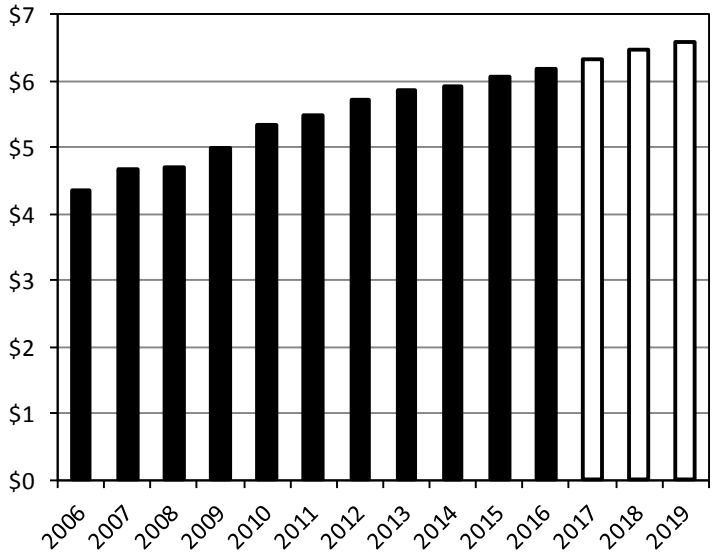
Department of Revenue GENTAX reports provided historical information on the number of cigarette packs sold. The general fund revenue data was obtained from SABHRS. Current tribal payments are provided by DOR Revenue Sharing Agreement Quarterly Reports. Population data forecasts are from by IHS Markit.

Revenue Description

According to 16-11-111, MCA, the Department of Revenue (DOR) is directed to collect a tax of 85 cents per ounce of moist snuff and 50% of the wholesale price of all other tobacco products (OTP), excluding cigarettes. Tobacco products destined for retail sale and consumption outside Montana are not subject to this tax. The general fund and the health and Medicaid initiatives account each receive 50% of the tobacco products tax revenue after payments are made as per tribal revenue sharing agreements.

Table 1
Tobacco Products Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$4.360	8.35%
A	2007	$4.670	7.10%
A	2008	$4.699	0.63%
A	2009	$4.990	6.21%
A	2010	$5.334	6.89%
A	2011	$5.477	2.68%
A	2012	$5.709	4.24%
A	2013	$5.853	2.51%
A	2014	$5.929	1.31%
A	2015	$6.056	2.13%
A	2016	$6.184	2.11%
F	**2017**	**$6.330**	**2.36%**
F	**2018**	**$6.461**	**2.08%**
F	**2019**	**$6.593**	**2.04%**



In FY 2004, there was a 54.5% increase in tobacco tax revenue due to SB 407 (2003 session). On May 1, 2003, SB 407 changed the tax on moist snuff from 12.5% of the wholesale price to 35 cents per ounce, an effective increase of 7 cents per ounce. SB 407 also increased the tax on all other tobacco from 12.5% of the wholesale price to 25% of the wholesale price. On January 1, 2005, Initiative 149 (I-149) changed the tax on moist snuff to 85 cents per ounce and increased the tax on all other tobacco products to 50% of the wholesale price.

Risks and Significant Factors

- Montana population age 15 and over, which experienced an average annual increase of 0.96% between FY 2012 and FY 2016, was used for this forecast because, according to statistical analysis, this demographic tracked total cigarette consumption over time better than changes in other age demographics such as total population, the population between 30 and 60 years old, etc.
- Moist snuff per capita consumption has experienced an average annual increase of 3.21 % from FY 2013 to FY 2016. Per capita OTP consumption is projected to decrease 2.52% per year.
- The excise tax on tobacco products is imposed on retail consumers, but the tax is collected by wholesalers. In accordance with 16-11-112, MCA, wholesalers are allowed a discount equal to 1.5% of total tax collections to defray collection and administrative costs.
- Tobacco product sellers can obtain a refund credit for tobacco products that could not be sold due to defect. The average percentage of defective product credits of total collections in FY 2013 through FY 2016 was 1.40% and is used to forecast refund credits for FY 2017 through FY 2019.

- Six Indian reservations in Montana have a tobacco revenue sharing agreement with the state: Blackfeet, Fort Belknap, Rocky Boy, Fort Peck, Crow, and Northern Cheyenne Reservations. Under the revenue sharing agreements, the tribe tobacco tax and the state tobacco tax are the same. The tribe's share of the tax revenue is 150% of the per capita state tobacco tax collected for each of the tribes' enrolled members residing on the reservation.

Forecast Methodology

The tobacco tax revenue is comprised of two taxes: (1) moist snuff tax of 85 cents per ounce; and (2) other tobacco products tax of 50% of the wholesale price. The six steps in estimating tobacco tax revenues are:

Step 1. Estimate per capita moist snuff consumption and the per capita consumption of other tobacco products.

Step 2. Estimate projected gross tobacco tax revenue by multiplying the per capita consumption times the population over 15 times the tax rate.

Step 3. Calculate wholesaler discounts at 1.5% of total tobacco tax revenue.

Step 4. Calculate refunds for unsalable product.

Step 5. Calculate tribes' revenue allocation.

Step 6. Calculate state tobacco tax revenue and allocation.

Distribution

Wholesaler discounts and refund credits are subtracted from total tobacco tax revenue and tribal allocation payments are subtracted from net revenue to determine total state other tobacco tax revenue. Fifty percent of the state tobacco tax revenue goes to the general fund and 50% goes to the health and Medicaid initiatives account.

Table 2
Distribution of Tobacco Products Tax
($ million)

Calculation	FY 2016	FY 2017	FY 2018	FY 2019
Total Tobacco Tax Revenue	$13.555	$13.842	$14.130	$14.419
Subtract Discounts/Refund Credits	$0.423	$0.401	$0.410	$0.418
Subtract Tribal Payments	$0.764	$0.781	$0.798	$0.814
Total State Tobacco Tax Revenue	$12.369	$12.659	$12.922	$13.186
Allocation				
Total to Health and Medicaid (50%)	$6.184	$6.330	$6.461	$6.593
Total to General Fund (50%)	**$6.184**	**$6.330**	**$6.461**	**$6.593**

Data Sources

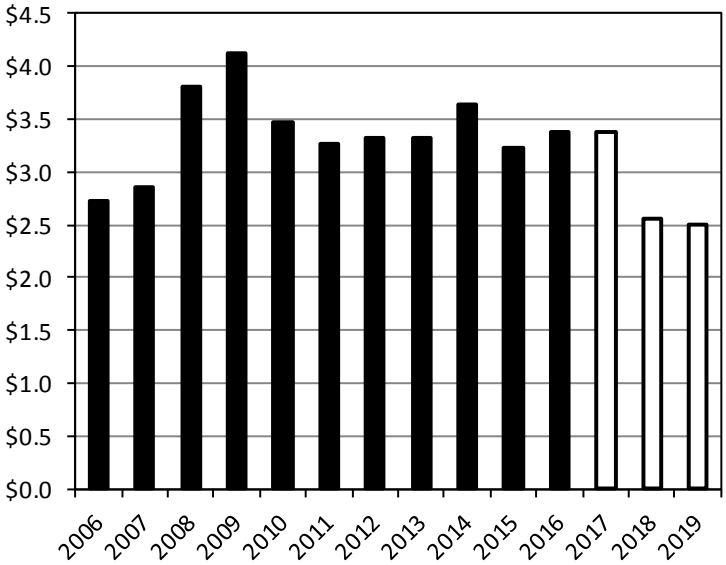
Department of Revenue GENTAX reports provided historical information on the amount of moist snuff ounces sold and the price of other tobacco products sold. General fund revenue data is from SABHRS. Current tribal payments are provided by DOR Revenue Sharing Agreement Quarterly Reports. Other data provided by DOR includes the amount of discounts and credits applied to distributors of other tobacco products. Population data is provided by IHS Markit.

Revenue Description

In 1998, Montana, along with 45 other states, signed a settlement agreement with major tobacco companies. Pursuant to the agreement, Montana will receive approximately $832 million by the year 2025. Payments are made annually beginning in FY 2000. The schedule of payments provided for under the settlement agreement is subject to change depending on adjustment criteria specified in the agreement.

Table 1
Tobacco Settlement
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$2.734	-8.21%
A	2007	$2.861	4.67%
A	2008	$3.808	33.07%
A	2009	$4.128	8.41%
A	2010	$3.469	-15.97%
A	2011	$3.259	-6.05%
A	2012	$3.322	1.95%
A	2013	$3.321	-0.03%
A	2014	$3.646	9.76%
A	2015	$3.225	-11.54%
A	2016	$3.371	4.54%
F	**2017**	**$3.371**	**-0.01%**
F	**2018**	**$2.561**	**-24.03%**
F	**2019**	**$2.500**	**-2.38%**



In FY 2008, the base payment paid to states increased from $8 billion to $9 billion. This accounts for the large percentage increase from FY 2007 to FY 2008. However, the forecast payments, when adjusted for inflation, are decreasing or flat because cigarette consumption per capita (nationwide) has slightly decreased. Further, additional adjustments to the annual payments have been made since FY 2005 to compensate for changes in market share among the participating and non-participating manufacturers. These market share adjustments are forecast to continue through FY 2019.

Two major arrangements in the allocation of the tobacco settlement revenue have existed since the first payment was received in FY 2000. First, in November 2000, Montana's electorate passed Constitutional Amendment 35. The amendment required no less than 40% of tobacco settlement revenue to be deposited in a trust fund, with the remaining money deposited in the state general fund. The trust fund was established to provide a permanent source of revenue to fund the costs associated with programs for tobacco disease prevention and healthcare benefits, services, or coverage. The amendment further stated that 90% of the interest income from the trust fund could be appropriated; with 10% of the interest income from the trust fund to be deposited in the trust fund on or after January 1, 2001. The principal of the trust fund and 10% of the interest income was to be deposited in the trust fund and remain forever inviolate unless appropriated by a vote of two-thirds of the members of each house of the Legislature.

Second, in the November 2002 election, Initiative 146 (I-146) was passed. I-146 required the tobacco settlement payments received after June 30, 2003, be deposited as follows: 32% in a state special revenue account for tobacco prevention; 17% in a state special revenue account for health insurance benefits; 40% in the trust fund; and 11% in the state general fund.

Risks and Significant Factors

Strategic contribution payments to states from participating manufacturers ends after the 2017 sales year. Historically, the strategic payment has amounted to about $0.85 million per year to the general fund.

If Original Participating Manufacturer's (OPMs) and Subsequent Participating Manufacturers (SPMs) lose market share to Non-Participating Manufacturers (NPMs), OPMs and SPMs may be entitled to pay less by means of an NPM adjustment. The NPM adjustment is conditional upon two factors: (1) whether there has been a loss in market share by participating manufacturers to NPMs; and (2) whether that loss is attributable to disadvantages resultant from the tobacco settlement.

A specific provision of the Master Settlement Agreement (MSA), referred to as the safe harbor provision, is relevant to this adjustment. Under the safe harbor provision, a state can avoid a payment reduction due to the NPM adjustment if a qualifying statute is enacted and "diligently enforced". The qualifying statute provides for an amount to be paid into an escrow account for each cigarette sold by NPMs in the state that is equivalent to the amount that would have been paid had the NPMs participated in the settlement.

An independent auditor determined that, beginning in 2003, participating manufacturers started losing market share to NPMs. Pursuant to this finding, OPMs and SPMs can pay a portion of their tobacco settlement payments into a disputed payment account (DPA), and have routinely done so beginning in FY 2006. Withheld disputed amounts are not to be distributed to the states until the dispute is resolved.

There are numerous possible outcomes to the dispute over the NPM adjustment. The following is a short list of possible outcomes over this disputed money.

- Litigation/arbitration may extend beyond FY 2019. If this is the case, then it is likely that OPMs and SPMs will continue to place the disputed money in the separate dispute account.
- If it is found that the loss in market share for participating manufacturers was not due to disadvantages resulting from the tobacco settlement, then the monies withheld would likely be distributed to the states immediately.
- If a settlement is reached between the states and the participating manufacturers, payments could be reduced by some amount, the safe harbor statute could be revised, or some combination of the two. The fiscal impacts of such a settlement are unknown because the terms of such a settlement are uncertain.
- It may be found that the loss in market share is due to disadvantages as a result of the tobacco settlement and that every state did not "diligently enforce" their safe harbor statutes. This finding would mean that states would likely face an undetermined reduction to the settlement funds they receive.
- Many possible outcomes exist and it is unknown at this time which scenarios are more likely. However, for purposes of this estimate, it is assumed that the dispute over the NPM adjustment will not be resolved prior to the FY 2017 payment, and that for FY 2017 through FY 2019, the participating manufacturers will continue to withhold NPM adjustment amounts proportional to those withheld in FY 2014 through FY 2016.

Forecast Methodology

The MSA provides for complex methods and formulas to calculate annual payments made by the settling tobacco companies to each state. Several clauses in the tobacco settlement set forth the precise calculations for the adjustments to the payments due from the two categories of settling companies: (1) OPMs and (2) SPMs.

Seven major steps are used to calculate the annual amount due to Montana from tobacco companies which are parties to the MSA. These calculations are completed for both the non-strategic and strategic payments and are summarized in Table 2:

Step 1. The inflation adjustment;

Step 2. The volume adjustment to the base payment;

Step 3. The volume adjustment to the base operating income (This adjustment has not taken place since 2000);

Step 4. Previously settled states' reduction;

Step 5. SPM payments;

Step 6. Montana's share of the total payment; and

Step 7. Adjustments for NPM and other payment disputes.

Table 2
Summary Calculation of Tobacco Settlement Revenue
($ millions)

Description	FY 2016	FY 2017	FY 2018	FY 2019
Non-Strategic Base Payment	$8,139.000	$8,139.000	$8,139.000	$8,139.000
Inflation Adjustment	$5,594.854	$5,198.723	$5,329.472	$5,374.350
Net Volume Adjustment	($7,058.219)	($7,017.365)	($7,246.178)	($7,426.676)
Previously Settled States Reduction	($816.923)	($773.446)	($761.445)	($744.849)
Adjusted OPM Base Payment	**$5,858.713**	**$5,546.912**	**$5,460.849**	**$5,341.825**
Adjusted SPM Base Payment	**$402.122**	**$380.721**	**$374.814**	**$366.645**
Adjustments	$50.094	$13.161	$13.161	$13.161
Sub-total Adjusted Base Payment	$6,310.930	$5,940.794	$5,848.824	$5,721.631
Montana's Percentage	0.4247591%	0.4247591%	0.4247591%	0.4247591%
Total Adjusted Non-Strategic Payment (IX)(c)(1)	**$26.806**	**$25.234**	**$24.843**	**$24.303**
Strategic Base Payment	$861.000	$861.000	$0.000	$0.000
Inflation Adjustment	$591.863	$549.957	$0.000	$0.000
Volume Adjustment	($746.667)	($742.346)	$0.000	$0.000
Adjusted OPM Base Payment	**$706.195**	**$668.611**	**$0.000**	**$0.000**
Adjusted SPM Base Payment	**$42.539**	**$40.275**	**$0.000**	**$0.000**
Adjustments	($0.084)	($0.127)	$0.000	$0.000
Sub-total Adjusted Base Payment	$748.650	$708.760	$0.000	$0.000
Montana's Percentage	1.0447501%	1.0447501%	1.0447501%	1.0447501%
Total Adjusted Strategic Payment (IX)(c)(2)	**$7.822**	**$7.405**	**$0.000**	**$0.000**
Total MT Payment	**$34.628**	**$32.639**	**$24.843**	**$24.303**
Total of NPM and Other Adjustment	($3.978)	($1.992)	($1.562)	($1.577)
Adjusted MT Payment	**$30.650**	**$30.646**	**$23.281**	**$22.726**

Distributions

Table 3 shows the actual allocation for FY 2016 and the projected distribution of Montana's share of the Tobacco Master Settlement Agreement for FY 2017 through FY 2019.

Table 3
Tobacco Settlement Payment Distributions
($ millions)

	FY 2016	FY 2017	FY 2018	FY 2019
Tobacco Trust Fund (40%)	12.260	12.259	9.313	9.091
Tobacco Prevention Account (32%)	9.808	9.807	7.450	7.272
Health Insurance Benefits Acc. (17%)	5.210	5.210	3.958	3.863
General Fund (11%)	3.371	3.371	2.561	2.500
Total MT Payment	**30.650**	**30.646**	**23.281**	**22.726**

Data Sources

Tobacco Settlement data was obtained from SABHRS, Price Waterhouse Coopers Tobacco Master Litigation Master Settlement website, and the Tobacco Master Settlement Agreement (MSA). Historical inflation data was obtained from the Bureau of Labor Statistics and forecast inflation was derived from IHS Markit.

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

SALES REVENUE
SECTION 8

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

Telecommunications Excise Tax

2019 Biennium

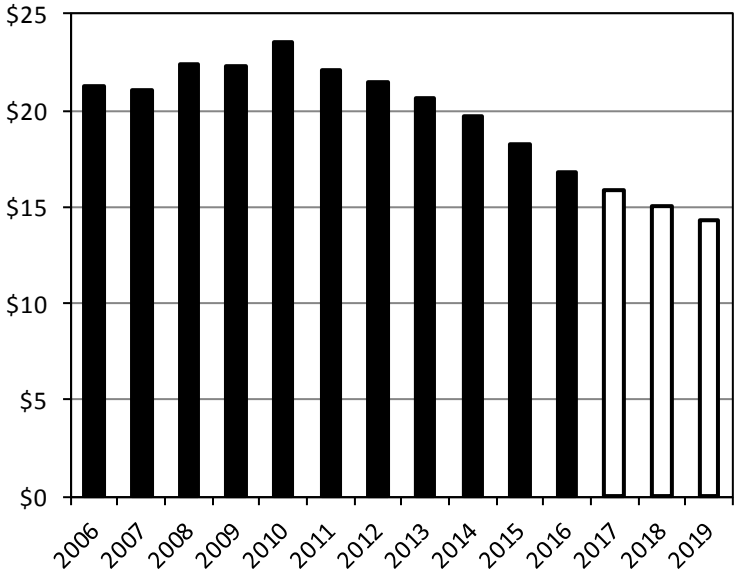
Revenue Description

Under 15-53-130, MCA, a 3.75% excise tax is assessed on retail telecommunications services. Telecommunications services are defined as two-way transmission of information over a telecommunications network that originates or terminates in the state and are billed to a customer with a Montana service address. Telecommunications service providers are required to collect the tax and make quarterly payments within 60 days after the end of each quarter.

Table 1 shows actual general fund revenue from retail telecommunications excise tax collections for FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019.

Table 1
Telecommunications Excise Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$21.226	0.23%
A	2007	$21.066	-0.75%
A	2008	$22.350	6.10%
A	2009	$22.250	-0.45%
A	2010	$23.523	5.72%
A	2011	$22.050	-6.26%
A	2012	$21.459	-2.68%
A	2013	$20.652	-3.76%
A	2014	$19.657	-4.82%
A	2015	$18.257	-7.12%
A	2016	$16.775	-8.12%
F	**2017**	**$15.897**	**-5.24%**
F	**2018**	**$15.063**	**-5.24%**
F	**2019**	**$14.274**	**-5.24%**



Risks and Significant Factors

- The telecommunications excise tax replaced the telephone company license tax on January 1, 2000.
- In the past, audit assessments introduced timing variation in collections as the attribution of assessments were not resolved in the year issued.
- The State Tax Appeal Board (STAB) ruled in July 2011, that the tax does not apply to mobile telecommunications services paid with prepaid calling cards sold by third party retailers. This has reduced collections.
- Households and businesses are eliminating their use of wire-line services. This change in consumer preference reduces the tax base as the expansion of "smartphones" shifts services offered by telecommunications companies to (tax free) internet based services.
- The closure of a mobile telecommunications company in September 2014, (FY 2015) reduced the tax base by as much as five percent. Only a small portion of that service appears to have been replaced.
- A permanent moratorium on internet access taxes was established when the *Internet Tax Freedom Act* became permanent on February 24, 2016, with the signing of the *Trade Facilitation and Trade Enforcement Act of 2016.* While the Act does not ban taxes on sales of products and services over the internet, to the extent that these services can be delivered over the internet and classified as internet access, retail telecommunications excise taxes collections are expected to decline.

Forecast Methodology

The estimate is a simple projection based on the long run trend growth of base collections. The base collections are taxes due before audit, penalty, and interest assessments. The non-compounding annual growth rate between FY 2011 to FY 2016 was negative 5.24%. This period was chosen since it represents the steepest annualized decline in base collections. In the past, audit revenues were excluded from this calculation to reduce the effect of misallocating audit revenue to fiscal years. However, STAB decisions on the non-taxable status of certain pre-paid resellers, and court decisions on the *Internet Tax Freedom Act* applicability to some telecommunications services has resolved many issues of interpretation that had generated audit assessments. Audit revenues are assumed to be equal to the rounded value of FY 2016 audit collections ($10,000).

The trend reference period also includes the termination of operations by a mid-sized mobile telecommunications company in September 2014. It is assumed that little of this company's customer base has been picked-up in the taxable services offered by other providers.

Table 2 illustrates actual revenue collections for the excise tax, as well as audit and penalty collections for FY 2005 through FY 2016. The forecast of total collections for FY 2017, FY 2018, and FY 2019 is presented with the associated audit revenue and the implied growth rate of the tax.

Table 2
Total Collections
($ millions)

Fiscal Year		Excise Tax		Audits, Penalties & Interest		General Fund	Percent Change
A	2005	$21.173	+	$0.003	=	$21.176	1.23%
A	2006	$21.226	+	$0.166	=	$21.392	1.02%
A	2007	$21.066	+	$0.697	=	$21.762	1.73%
A	2008	$21.128	+	$1.223	=	$22.350	2.70%
A	2009	$21.905	+	$0.345	=	$22.250	-0.45%
A	2010	$21.121	+	$2.402	=	$23.523	5.72%
A	2011	$21.950	+	$0.100	=	$22.050	-6.26%
A	2012	$21.199	+	-$0.306	=	$20.893	-5.25%
A	2013	$20.586	+	$0.066	=	$20.652	-1.15%
A	2014	$19.636	+	$0.020	=	$19.657	-4.82%
A	2015	$18.245	+	$0.027	=	$18.272	-7.05%
A	2016	$16.766	+	$0.009	=	$16.775	-8.19%
F	**2017**	**$15.887**	**+**	**$0.010**	**=**	**$15.897**	**-5.24%**
F	**2018**	**$15.053**	**+**	**$0.010**	**=**	**$15.063**	**-5.24%**
F	**2019**	**$14.264**	**+**	**$0.010**	**=**	**$14.274**	**-5.24%**

Distribution

All telecommunications excise tax collections are allocated to the general fund pursuant to 15-53-156, MCA.

Data Sources

Revenue data is drawn from GENTAX data provided by the Department of Revenue and SABHRS.

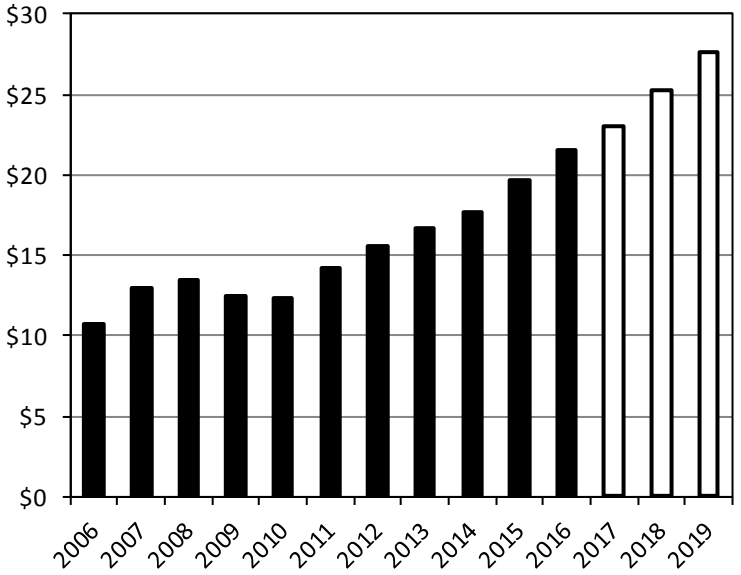
Revenue Description

In accordance with 15-68-102, MCA, a 3% accommodations **sales** tax is levied on all charges for accommodations at lodging facilities and campgrounds in the state. In accordance with 15-65-111, MCA, Montana charges a lodging facility **use** tax of 4% on all accommodations. All revenue from the **sales** tax and a portion of the **use** tax is distributed to the general fund. The majority of the **use** tax is distributed to other funds.

Table 1 shows actual revenue for the accommodations **sales** and **use** tax distributed to the general fund for FY 2006 though FY 2016 and forecast values for FY 2017 through FY 2019.

Table 1
Accommodations Tax
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$10.679	4.69%
A 2007	$12.916	20.95%
A 2008	$13.390	3.67%
A 2009	$12.477	-6.81%
A 2010	$12.331	-1.18%
A 2011	$14.241	15.49%
A 2012	$15.606	9.59%
A 2013	$16.720	7.13%
A 2014	$17.725	6.01%
A 2015	$19.697	11.12%
A 2016	$21.493	9.12%
F 2017	**$22.978**	**6.91%**
F 2018	**$25.249**	**9.88%**
F 2019	**$27.659**	**9.54%**



The accommodations **sales** tax was enacted in the 2003 session in SB 407 and was only collected for one month in FY 2003. The first full year of collections was FY 2004. As disposable income fell in FY 2009 and FY 2010, both in Montana and in the US, people spent less on accommodations and as a result, tax revenue declined during those years.

In November 2015, a $1.1 million settlement from the online travel companies for accommodations **sales** tax and interest was received for prior years FY 2010 through the first two quarters of FY 2015. All of this is included in FY 2016 **sales** tax collections. It is expected that an ongoing revenue from the online travel companies will grow at the same rate other accommodations **sales** taxes increase. These revenues have been included in the projections for FY 2017 through FY 2019.

HB 111 in the 2011 session changed the allocation of the lodging facility **use** taxes collected from state agencies. Formerly, these taxes were distributed back to the agency that made the in-state lodging expenditures. HB 111 allocated 30% of these collections to the general fund, with the balance returned to the agency that made the in-state lodging expenditure. Any lodging **use** tax collected from state agencies paying with federal funds, was held by the Department of Revenue to be returned to the federal government. The remainder of the funds paid by state agencies for lodging facility **use** taxes was distributed to the funds in 15-65-121, MCA.

HB 477 in the 2011 session changed the distribution of the lodging facility **use** tax reducing the amount distributed to the Department of Commerce by 2.6% and allocating 2.6% to Montana Historical Interpretation.

HB 32 in the 2013 session revised statute to allow the lodging **use** tax paid by state agencies with federal funding to be returned to the state agency that paid the in-state lodging **use** tax.

Table 2 summarizes the distribution of the lodging facility **use** tax.

Table 2
Lodging Use Tax Distribution
($ millions)

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
General Fund	$0.046	$0.038	$0.034	**$0.034**	**$0.034**	**$0.034**
DOR Tax Administration	$0.144	$0.148	$0.148	**$0.148**	**$0.148**	**$0.148**
MT Heritage Preservation Society	$0.400	$0.400	$0.400	**$0.400**	**$0.400**	**$0.400**
Montana Historical Society	$0.239	$0.265	$0.273	**$0.300**	**$0.331**	**$0.363**
University System	$0.596	$0.663	$0.683	**$0.751**	**$0.827**	**$0.907**
Fish, Wildlife, & Park	$1.551	$1.724	$1.776	**$1.953**	**$2.150**	**$2.359**
Commerce	$15.482	$17.217	$17.731	**$19.501**	**$21.466**	**$23.552**
Regional Travel Promotion	$5.367	$5.969	$6.147	**$6.761**	**$7.442**	**$8.165**
Montana Historical Interpretation	$0.620	$0.690	$0.710	**$0.781**	**$0.860**	**$0.944**
Total Use Tax Revenue	$24.445	$27.114	$27.903	**$30.630**	**$33.658**	**$36.871**

Forecast Methodology

There are three steps used when forecasting the accommodations **sales** and **use** taxes:

Step 1: Estimate lodging receipts.

Step 2: Estimate vendor allowances. A 5% vendor allowance is permitted, up to $1,000 for accommodations sales tax.

Step 3: Calculate the lodging facility **use** tax (4%) of the taxable value of lodging receipts plus the **sales** tax (3%) minus the vendor allowance.

Distribution

After the DOR administration, state agency, and general fund distributions are made, the remainder is distributed as follows (15-65-121, MCA):

1. 30% of the use tax revenue generated by state employees goes to the general fund.
2. The Montana heritage preservation and development account receives $400,000.
3. The remainder is distributed as follows:
    a. 1.0% to the Montana Historical Society for roadside historic sites and signs;
    b. 2.5% to the university system for tourism research;
    c. 6.5% to the Department of Fish, Wildlife and Parks for parks maintenance;
    d. 64.9% to the Department of Commerce for statewide tourism promotion;
    e. 22.5% to regional tourism promotion agencies; and
    f. 2.6% to the Montana historical interpretation state special revenue account.

Data Sources

Fiscal year end revenues are from SABHRS MTG L0109 report. Additional data were provided by DOR's GENTAX system.

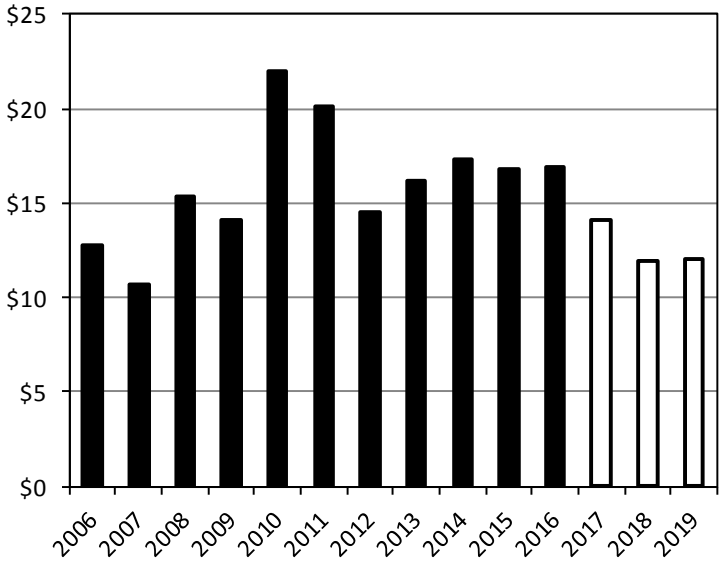
Revenue Description

The Montana Department of Public Health and Human Services (DPHHS) operates facilities to treat persons with developmental disabilities and mental illnesses. The Montana Developmental Center in Boulder (MDC) serves persons with developmental disabilities. The Montana State Hospital in Warm Springs (MSH) and the Montana Mental Health Nursing Care Center in Lewistown (MMHNCC) treat persons with severe mental illnesses.

The department charges patients for treatment based on cost and on their ability to pay (53-1-405, MCA). Patients and their families, patients' insurance, Medicare, and Medicaid pay these charges. Payments go first to repay MDC (through FY 2016) and MSH debt service obligations associated with the institutions' mortgages (90-7-220 and 221, MCA). After the debt service obligations are met, payments for care at the institutions are deposited in the general fund.

Table 1
Institutional Reimbursements
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$12.728	1.75%
A	2007	$10.669	-16.17%
A	2008	$15.335	43.73%
A	2009	$14.101	-8.05%
A	2010	$22.000	56.02%
A	2011	$20.158	-8.37%
A	2012	$14.562	-27.76%
A	2013	$16.212	11.33%
A	2014	$17.298	6.70%
A	2015	$16.819	-2.77%
A	2016	$16.910	0.54%
F	**2017**	**$14.083**	**-16.72%**
F	**2018**	**$11.915**	**-15.39%**
F	**2019**	**$12.017**	**0.86%**



Risks and Significant Factors

- SB 411, passed by the 2015 Legislature, directed the closure of the Montana Developmental Center (MDC) by July 1, 2017. From FY 2012 to FY 2016, MDC has collected an average of $7.43 million in institutional reimbursements. If the closure plans are altered, the collections to the general fund will vary from this analysis.
- As a result of SB 411, the Department of Public Health and Human Services (DPHHS) chose to pay, in full, the outstanding bond balance for MDC. Future debt services payments distributed out of institutional reimbursements are now reduced by $1.0 million annually.
- The increased revenue received in FY 2010 and FY 2011 is primarily due to the enhanced Federal Medical Assistance Percentage (FMAP) rate resulting from the American Recovery and Reinvestment Act (ARRA).

Forecast Methodology

There are four steps to estimating general fund receipts:

Step 1. Estimate daily reimbursement rates for each type of reimbursement at each institution.

- The primary reimbursement sources are payments from patients and their families, insurance, Medicare, and Medicaid. Residents and their families are billed by DPHHS based on cost and their ability to pay. For adults in long-term care, the primary resource for these payments is Supplemental Security Income (SSI) disability payments. Private and SSI reimbursement rates are based upon estimates provided by DPHHS.
- Insurance rates are insurance reimbursements for a few covered residents divided by the total number of care days for all residents, most of whom have no applicable coverage.
- Medicare provides coverage for medical costs for the aged and disabled. Medicare rates are set for each fiscal year by the Centers for Medicare and Medicaid Services using a formula that depends on medical cost inflation, past payments, growth in the number of persons covered, the type of health care service received, and the state and county where it is received. Medicare payments per day are based upon information provided by DPHHS.
- Medicaid pays costs that residents cannot. Therefore, the Medicaid daily rate is equal to the full cost rate less the patient/family and SSI reimbursements per day. Medicaid is a joint federal-state program so only the federal portion comes to the state as net reimbursement. Medicaid also pays some ancillary service costs that are not on a daily basis, such as medications and laboratory work. Historically, the variability in Medicaid payment rates can be attributed to, in part, changes in the FMAP rates.

Step 2. Estimate the average daily population and the number of care days for which each institution will be reimbursed.

Step 3. Multiply the reimbursement rates by the number of care days to obtain reimbursement revenue.

- Private reimbursement for a fiscal year is the average daily reimbursement times the number of care days. Medicaid reimbursement for a fiscal year is the average daily reimbursement times the number of Medicaid eligible residents times the number of days.

Step 4. Subtract the institution's debt service payments to derive the general fund revenue.

- General fund revenue is total reimbursements for MDC, MSH, and MMHNCC, plus other receipts, minus debt service payments for MDC and MSH. Debt service payments are provided by DPHHS and are shown in Table 2.

Distributions

Table 2 shows the actual reimbursements for FY 2016 and the projection of general fund revenue from institutional reimbursements in FY 2017 through FY 2019.

Table 2
Institutional Reimbursements to the General Fund
($ millions)

	Fiscal	----------Reimbursements----------										----------Debt Service----------			General
	Year	MDC		MSH		MMHNCC		Other Receipts		MDC		MSH			Fund
A	2016	$6.785	+	$7.975	+	$4.479	+	$2.144	-	$2.720	-	$1.752	=		$16.910
F	**2017**	**$2.077**	**+**	**$9.612**	**+**	**$4.150**	**+**	**$0.019**	**-**	**$0.000**	**-**	**$1.757**	**=**		**$14.083**
F	**2018**	**$0.033**	**+**	**$9.595**	**+**	**$4.044**	**+**	**$0.019**	**-**	**$0.000**	**-**	**$1.757**	**=**		**$11.915**
F	**2019**	**$0.033**	**+**	**$9.685**	**+**	**$4.057**	**+**	**$0.019**	**-**	**$0.000**	**-**	**$1.757**	**=**		**$12.017**

Data Sources

DPHHS provided actual and projected per day reimbursement rates and care days, as well as information regarding debt service for the facilities. FMAP percentages are based on OBPP estimates.

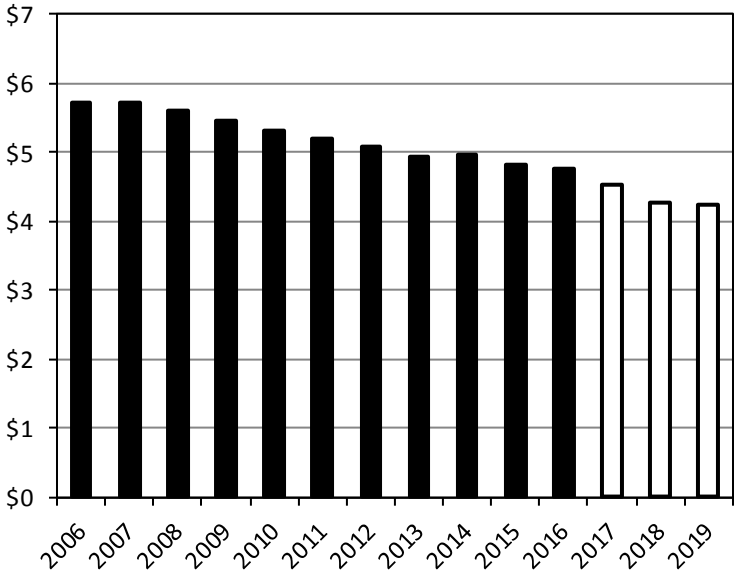
Revenue Description

Per 15-60-102, MCA, Montana imposes a per bed day fee on nursing facilities and intermediate care facilities for the developmentally disabled. The fee for nursing facilities was $2.80 per bed day through FY 2002. The fee was raised to $4.50 in FY 2003, to $5.30 in FY 2005, and to $7.05 in FY 2006. In FY 2007, it was raised to $8.30 (15-60-102, MCA). Through FY 2002, all fees were allocated to the general fund. Currently, $2.80 of the fee is allocated to the general fund and the remaining $5.50 is allocated to the nursing facility utilization fee special revenue account.

The fee for intermediate care facilities for the developmentally disabled is 6% of revenue (15-67-102, MCA). The only facility in Montana currently meeting this definition is the Montana Developmental Center (MDC). Fees collected from the facilities operated by the Department of Public Health and Human Services (DPHHS) are allocated 30% to the general fund and 70% to the prevention and stabilization special revenue account.

Table 1
Health Care Facility Utilization Fees
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$5.712	-3.39%
A 2007	$5.717	0.09%
A 2008	$5.610	-1.87%
A 2009	$5.469	-2.52%
A 2010	$5.300	-3.08%
A 2011	$5.197	-1.94%
A 2012	$5.077	-2.32%
A 2013	$4.928	-2.93%
A 2014	$4.961	0.67%
A 2015	$4.810	-3.04%
A 2016	$4.764	-0.95%
F 2017	**$4.526**	**-5.00%**
F 2018	**$4.276**	**-5.53%**
F 2019	**$4.244**	**-0.73%**



The 2003 Legislature passed three bills that changed health care facility fees. HB 705 set the nursing facilities fee at $4.50 in FY 2004 and $5.30 beginning in FY 2005 and allocated the additional revenue to the nursing facility utilization fee account. HB 743 made the Montana Mental Health Nursing Care Center (MMHNCC) subject to the nursing facility utilization fee and allocated 30% of fees from this facility to the general fund and 70% to a new prevention and stabilization special revenue account. HB 722 created a new fee equal to 5% of charges for care that applied only to the MDC. The revenue from the new fee is allocated 30% to the general fund and 70% to the prevention and stabilization special revenue account.

In 2005, the Legislature passed two bills, HB 749 and SB 82, which changed health care facility fees. HB 749 increased the facility bed tax to $7.05 per day in FY 2006 and to $8.30 per day in FY 2007. The increased revenue from fees collected from non-state facilities is allocated to the nursing facility utilization fee account. SB 82 increased the bed tax on intermediate facilities for the developmentally disabled from 5% to 6% and amended the definition of facilities to which the 6% bed tax applies to include intermediate care facilities for the intellectually disabled. SB 82 was effective immediately on passage and was retroactive to the beginning of tax year (TY) 2005.

Risks and Significant Factors

- Taxable bed days at non-state facilities declined at an average rate of 2.50% between FY 2012 and FY 2016. Revenue from non-state facilities is declining over the forecast period because fewer bed days are estimated.
- SB 411, passed by the 2015 Legislature, directed the closure of the Montana Developmental Center (MDC) by July 1, 2017. The resulting reduction in expenditures for the cost of care at MDC will reduce the utilization fee revenue by over $0.6 million per year. If the closure plans are altered, the collections to the general fund will vary from this analysis.

Forecast Methodology

Revenue is estimated separately for fees from private nursing homes, the MMHNCC, and the MDC. The estimate is based on forecast bed days for the MMHNCC and budget estimates for the MDC. Forecast bed days for non-state owned facilities are based on the historic trend.

- Bed days for FY 2017 through FY 2019 for the MMHNCC are forecast by DPHHS, which operates the facility. Total collections equal the number of bed days multiplied by the fee per bed day of $8.30. Thirty percent of collections are allocated to the general fund and 70% are allocated to the prevention and stabilization account. Estimated bed days for MMHNCC are estimated to increase by 0.93% per year for the period FY 2017 through FY 2019.

- MDC is the only facility in Montana subject to the intermediate care facility utilization fee. The fee is 6% of the cost of care billed to residents and third parties. The cost of care for FY 2017 through FY 2019 is estimated by DPHHS, which operates the facility, and is based on planned numbers of residents and expected costs. Thirty percent of collections are allocated to the general fund and 70% are allocated to the prevention and stabilization account.

Distributions

Total collections for each fund are calculated by summing the collections from non-state facilities and collections from the two state facilities. Table 2 shows the actual allocation for FY 2016 and the projected allocation for FY 2017 through FY 2019.

Table 2
Health Care Facilities Utilization Fee
Collections and Distribution
($ millions)

	FY 2016	FY 2017	FY 2018	FY 2019
Nursing Facility Utilization Fee Account	8.587	8.297	8.233	8.170
Prevention and Stabilization Account	0.919	0.706	0.197	0.199
General Fund	4.764	4.526	4.276	4.244
Total Collections	**14.270**	**13.528**	**12.706**	**12.613**

Data Sources

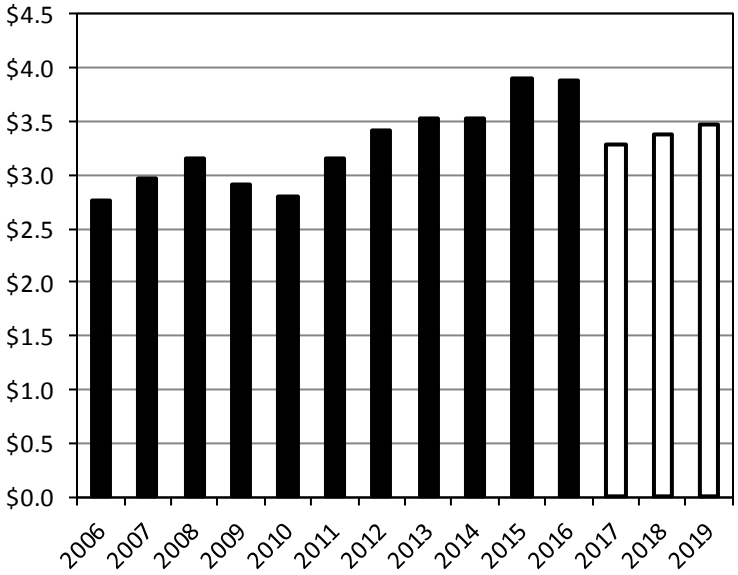
Department of Revenue GENTAX reports provided historical information on the number of taxable bed days. SABHRS provided historical tax revenue and allocation information. Future bed days and cost of care at MMHNCC and MDC are from DPHHS.

Revenue Description

Montana levies a 4% tax on base rental charges on rental vehicle sales per 15-68-102(1b), MCA. The rental vehicle sales tax collections began in FY 2004. Table 1 shows actual general fund revenue for the rental car sales tax for FY 2006 through FY 2016 and projected revenue for FY 2017 through FY 2019.

Table 1
Rental Car Sales Tax
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$2.755	7.39%
A	2007	$2.976	8.03%
A	2008	$3.157	6.08%
A	2009	$2.904	-8.01%
A	2010	$2.807	-3.34%
A	2011	$3.149	12.17%
A	2012	$3.420	8.59%
A	2013	$3.523	3.02%
A	2014	$3.521	-0.05%
A	2015	$3.907	10.95%
A	2016	$3.878	-0.74%
F	**2017**	**$3.282**	**-15.37%**
F	**2018**	**$3.379**	**2.96%**
F	**2019**	**$3.473**	**2.79%**



Risks and Significant Factors

- Rental car sales tax revenue is heavily influenced by tourism and business travel.
- Nonresident visitation to Montana is at record highs.
- Deboardings at Montana airports are exhibiting strong growth.

Forecast Methodology

Step 1: Forecast the value of taxable rental car sales as a function of Montana airport deboardings.

Step 2: Apply the rental car tax rate to taxable sales to obtain total tax revenue.

Step 3: Allocate total tax revenue 75% to the general fund.

Distribution

This tax is distributed 75% to the general fund and 25% to the senior citizen and persons with disabilities transportation services account provided for in 7-14-112, MCA. The change to the distribution of rental car sales tax revenue is a result of SB 180 from the 2015 legislative session (prior to this the revenue was distributed 100% to the general fund).

Data Sources

Historical rental car sales tax data are from the Department of Revenue. Tourism data are from the University of Montana Institute for Tourism and Recreation Research.

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

OTHER GENERAL FUND REVENUE SECTION 9

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

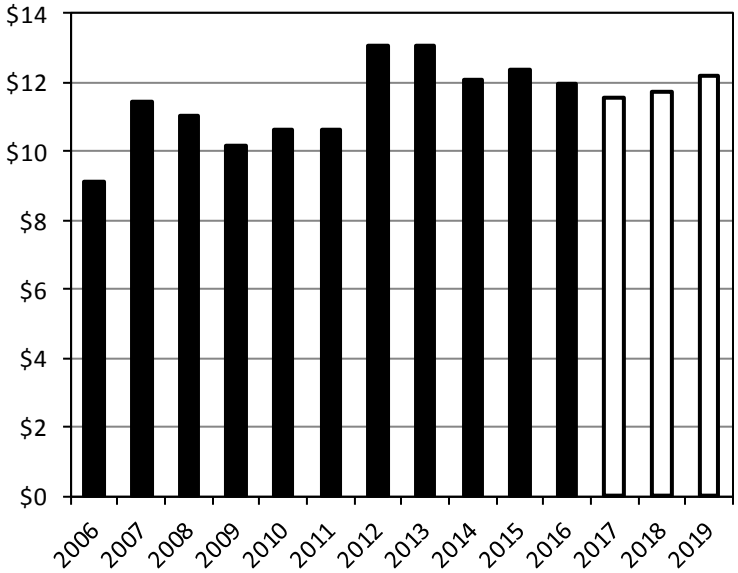
Revenue Description

In accordance with 23-7-402, MCA, net revenue from the operation of the lottery is to be deposited quarterly into the state general fund. Net revenue is equivalent to gross revenue from ticket sales, interest earnings, and minor miscellaneous sources less prize payouts, commissions, and operating expenses.

Table 1 shows actual lottery revenue transferred to the general fund for FY 2006 to FY 2016 and forecast revenues for FY 2017 through FY 2019.

Table 1
Lottery Profits
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$9.110	46.41%
A	2007	$11.420	25.35%
A	2008	$11.029	-3.43%
A	2009	$10.136	-8.09%
A	2010	$10.631	4.88%
A	2011	$10.636	0.05%
A	2012	$13.086	23.03%
A	2013	$13.084	-0.01%
A	2014	$12.091	-7.59%
A	2015	$12.363	2.26%
A	2016	$11.963	-3.24%
F	**2017**	**$11.549**	**-3.46%**
F	**2018**	**$11.728**	**1.54%**
F	**2019**	**$12.188**	**3.93%**



General fund lottery revenue fluctuated around an overall upward trend from FY 2006 to FY 2016. Over the years, general fund lottery collections have been impacted by variable economic conditions, changes in government policy, and actions carried out by the Montana Lottery itself. Beginning in FY 2006, the chances of winning the Powerball were decreased in order to increase jackpot levels, leading to an increase in player participation in FY 2006 and FY 2007. A rapid slowdown in disposable income growth in Montana resulting from the Great Recession contributed to depressed lottery revenue in FY 2009 - FY 2011. Collections popped in FY 2012 due to an exceptionally large Mega Millions jackpot that increased player participation. In addition, the new placement of lottery WinStation machines in grocery stores and the simultaneous doubling of Powerball minimum jackpots and ticket prices also helped boost FY 2012 lottery revenue. The flat growth in FY 2013 and decline in FY 2014 tie, to some degree, to the change in the payroll tax environment brought about by changes in federal law. Payroll tax cuts enacted as part of the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 were not extended when the American Taxpayer Relief Act took effect in January 2013. This increase in payroll taxes reduced individuals' disposable income, and may have had an adverse effect on their willingness to pay for lottery games. FY 2015 lottery revenue was positively affected by an accounting adjustment that resulted in misclassified prior years' expenses being included in the FY 2015 transfer to the general fund. Starting in FY 2016, HB 617 from the 2015 legislative session altered the distribution of lottery revenue to the general fund. The amount of lottery net revenue transferred to the general fund cannot exceed the amount of revenue transferred in FY 2015. Any revenue in excess of the FY 2015 level must be deposited in the Montana STEM scholarship program state special revenue account for the purpose of funding STEM scholarships.

Risks and Significant Factors

- Fluctuations in the share of disposable income that lottery participants allocate to the purchase of lottery games impacts gross receipts. Individuals in Montana spend slightly under 0.15% of their disposable income on lottery games. If this percentage remains stable, growth in disposable income will lead to growth in lottery receipts.
- The size of lottery jackpots influences spending on lottery games. Large jackpots attract more players and encourage existing players to participate at a higher rate.
- The balance of revenues and expenditures determines net revenue. Increasing expenditures must be met with higher revenues in order to mitigate a decline in net revenue.

Forecast Methodology

Lottery revenue is forecast using three main steps:

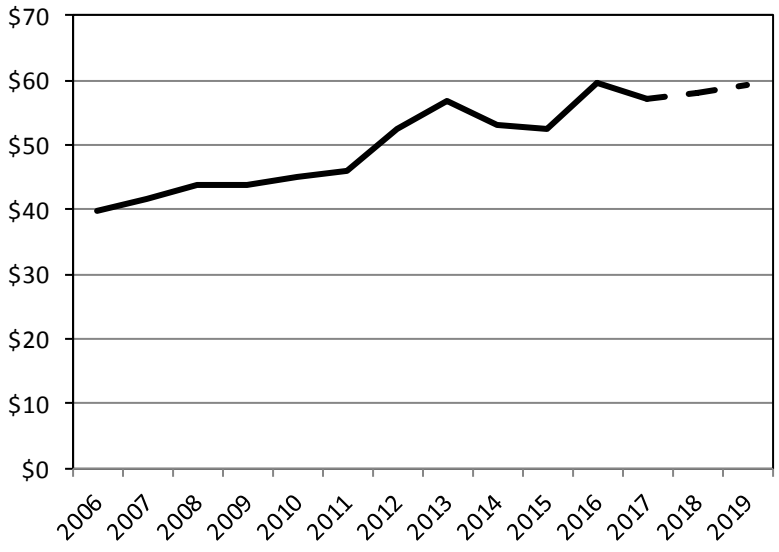
Step 1. Estimate lottery gross receipts. A linear regression model is used to predict gross receipts, which are modeled as a function of disposable income in Montana and a dummy variable to account for Powerball changes and the addition of machines at new locations. Disposable income is defined as the income individuals possess after income taxes have been accounted for. Income influences individuals' willingness to pay for lottery games, and gross lottery receipts are predicted to respond positively to changes in disposable income. The dummy variable that accounts for the increase in Powerball jackpots and the addition of new machines that began in FY 2012 is predicted to have a positive effect on lottery gross receipts in future years. More machines increase the accessibility of lottery games, which is assumed to lead to increased participation. Additionally, larger jackpots may increase participation if individuals change their lottery risk preferences due to the possibility of a larger payout.

The results of the linear regression model show that both disposable income and Powerball changes/new machines are statistically significant predictors of lottery gross receipts. Both variables have positive coefficients, meaning increases in disposable income lead to increases in lottery revenue, and that the change to Powerball jackpots and new machine placements contributed to positive lottery revenue growth in FY 2012 and beyond.

Table 2 shows actual gross receipts for FY 2006 through FY 2016 and forecast receipts for FY 2017 through FY 2019.

Table 2
Lottery Gross Receipts
($ millions)

Fiscal Year	Gross Receipts	Percent Change
A 2006	$39.918	18.06%
A 2007	$41.565	4.12%
A 2008	$43.822	5.43%
A 2009	$43.827	0.01%
A 2010	$45.193	3.12%
A 2011	$46.035	1.86%
A 2012	$52.602	14.26%
A 2013	$56.803	7.99%
A 2014	$53.091	-6.53%
A 2015	$52.324	-1.45%
A 2016	$59.701	14.10%
F 2017	**$57.156**	**-4.26%**
F 2018	**$58.166**	**1.77%**
F 2019	**$59.332**	**2.01%**



Step 2. Estimate direct game costs associated with prize payouts, commissions, and vendor fees. Historically, direct games costs have generally been in the range of 65%-70% of lottery gross receipts, and have been closer to 70% since FY 2013. This percentage is forecast forward and used in conjunction with the forecast for gross receipts to estimate future values for direct game costs. A three-year moving average is used to project the direct game costs percentage through the forecast period. Direct game costs are estimated to remain steady around 70% of gross receipts for FY 2017 through FY 2019. Multiplying this percentage by the predicted amount of gross receipts gives the estimated amount of direct game costs for the year.

Table 3 shows actual direct game costs and the ratio of direct game costs to gross receipts for FY 2006 through FY 2016. Forecast values are shown for FY 2017 through FY 2019.

Table 3
Game Costs & Gross Receipts
($ millions)

Fiscal Year	Gross Receipts		Direct Game Costs		% of Gross Receipts
A 2006	$39.918	÷	$27.009	=	67.66%
A 2007	$41.565	÷	$27.278	=	65.63%
A 2008	$43.822	÷	$29.330	=	66.93%
A 2009	$43.827	÷	$29.486	=	67.28%
A 2010	$45.193	÷	$32.283	=	71.43%
A 2011	$46.035	÷	$31.314	=	68.02%
A 2012	$52.602	÷	$35.733	=	67.93%
A 2013	$56.803	÷	$39.869	=	70.19%
A 2014	$53.091	÷	$36.635	=	69.00%
A 2015	$52.324	÷	$36.377	=	69.52%
A 2016	$59.701	÷	$42.120	=	70.55%
F 2017	**$57.156**	÷	**$40.417**	=	**70.71%**
F 2018	**$58.166**	÷	**$41.215**	=	**70.86%**
F 2019	**$59.332**	÷	**$42.039**	=	**70.85%**

Step 3. Add other income to gross receipts and then subtract direct game costs as well as operating expenses to determine net revenue. Include adjustments made to net revenue to arrive at the amount due to be transferred to the general fund. Other income comes primarily from short-term interest earnings on money held in the enterprise fund before it is transferred to the general fund. A three-year moving average is used to project other income forward. The amount of operating expenses for each of the three forecast years is based on the Montana Lottery's budgeted amount for those years.

Table 4 shows the breakdown of income and expenditures that are used in the calculation of lottery net revenue and final general fund revenue. The amount of net revenue shown in Table 4 does not necessarily reflect the amount that winds up being transferred to the general fund. This is due to various expenses that are included in the calculation of net revenue but excluded from the calculation of the general fund transfer amount. Historically, these expenses have been comprised of equipment depreciation and post-employment benefit costs. The depreciation expenses cease starting in FY 2017, but the post-employment benefit expenses remain, and will continue to cause a discrepancy to exist between the amount of net revenue and the general fund transfer. Table 4 shows the historical difference between net revenue and general fund revenue as well as estimates for the forecast period.

Table 4
Total Revenue & Expenses
($ millions)

Fiscal Year	Gross Receipts		Other Income		Direct Game Costs		Operating Expenses		Net Revenue		Other Adjustments		General Fund Revenue
A 2006	$39.918	+	$0.210	-	$27.009	-	$4.009	=	$9.111	+	$0.000	=	$9.110
A 2007	$41.565	+	$0.271	-	$27.278	-	$3.135	=	$11.423	+	-$0.002	=	$11.420
A 2008	$43.822	+	$0.185	-	$29.330	-	$3.650	=	$11.026	+	$0.002	=	$11.029
A 2009	$43.827	+	$0.084	-	$29.486	-	$4.294	=	$10.131	+	$0.006	=	$10.136
A 2010	$45.193	+	$0.038	-	$32.283	-	$4.078	=	$8.870	+	$1.762	=	$10.631
A 2011	$46.035	+	$1.647	-	$31.314	-	$4.066	=	$12.303	+	-$1.692	=	$10.611
A 2012	$52.602	+	$0.027	-	$35.733	-	$4.069	=	$12.826	+	$0.259	=	$13.086
A 2013	$56.803	+	$0.029	-	$39.869	-	$4.153	=	$12.810	+	$0.274	=	$13.084
A 2014	$53.091	+	$0.037	-	$36.635	-	$4.675	=	$11.819	+	$0.271	=	$12.091
A 2015	$52.324	+	$0.059	-	$36.377	-	$4.604	=	$11.401	+	$0.962	=	$12.363
A 2016	$59.701	+	$0.078	-	$42.120	-	$5.675	=	$11.983	+	-$0.020	=	$11.963
F 2017	**$57.156**	+	**$0.058**	-	**$40.417**	-	**$5.461**	=	**$11.336**	+	**$0.214**	=	**$11.549**
F 2018	**$58.166**	+	**$0.065**	-	**$41.215**	-	**$5.502**	=	**$11.514**	+	**$0.214**	=	**$11.728**
F 2019	**$59.332**	+	**$0.067**	-	**$42.039**	-	**$5.385**	=	**$11.975**	+	**$0.214**	=	**$12.188**

Data Sources

Revenue and expense data are obtained from SABHRS and the Montana State Lottery. Montana disposable income data are sourced from IHS Markit.

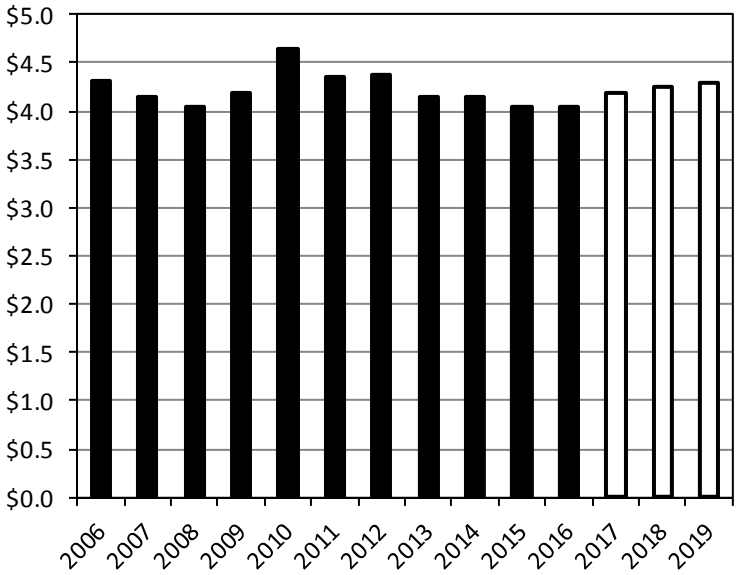
Revenue Description

Highway patrol fines are provided for in Title 61, Chapter 8, parts 3 and 7, MCA. Fines for citations are collected in Justice Courts. Highway patrol fines are distributed 50% to the county general fund and 50% to the state general fund, pursuant to 3-10-601, MCA. One-hundred percent of fines resulting from highway patrol officer stops for highway use or vehicle violations processed in any other court are paid into the state general fund (61-12-701, MCA).

Table 1 shows actual general fund revenue from highway patrol fines for FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019.

Table 1
Highway Patrol Fines
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$4.316	0.55%
A	2007	$4.155	-3.74%
A	2008	$4.049	-2.55%
A	2009	$4.180	3.22%
A	2010	$4.646	11.16%
A	2011	$4.359	-6.18%
A	2012	$4.385	0.59%
A	2013	$4.140	-5.58%
A	2014	$4.142	0.04%
A	2015	$4.042	-2.40%
A	2016	$4.040	-0.06%
F	**2017**	**$4.187**	**3.63%**
F	**2018**	**$4.244**	**1.37%**
F	**2019**	**$4.293**	**1.14%**



The table shows that fine revenues demonstrate occasional sharp increases (FY 2010) followed by several years of modest growth or decline. Recent declines in revenue are attributable to the combined effects of higher fuel prices and SB 264 (2005 anti-quota bill) which introduced highway patrol officer management changes in FY 2008. The FY 2016 rapid decline in gasoline prices and higher interstate highway speed limits do not yet appear to have led to increased citations. Highway patrol fine collections are forecast to gradually increase during the forecast period.

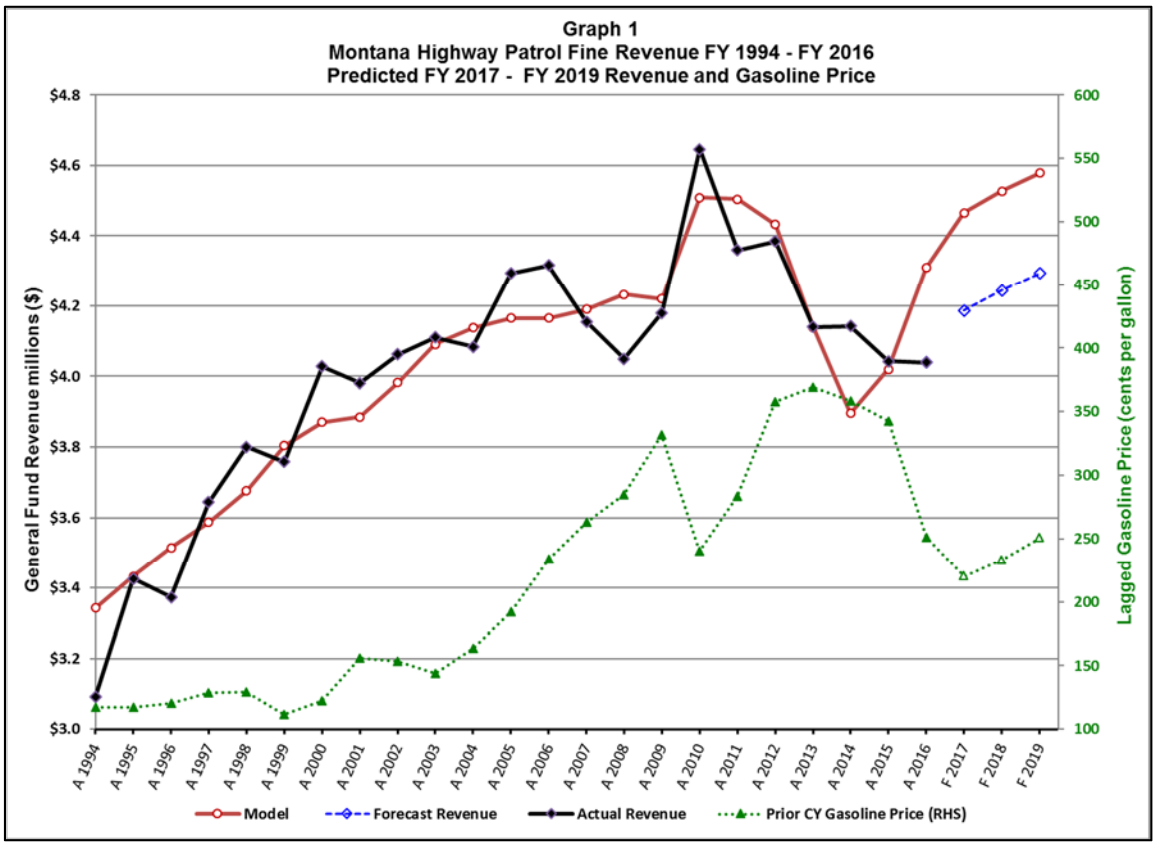
Risks and Significant Factors

- The 2015 Legislature passed SB 375 which increased the maximum speed limit on federal interstate highways from 75 MPH to 80 MPH and increased the penalties for violating speed limits. Annual revenue increases of approximately $100,000 were anticipated ($75,000 for FY 2016). These increases did not appear in FY 2016. Drivers may become more accustomed to the new higher speed limits and violations may increase more rapidly.
- Falling gasoline prices generally lead to increased highway patrol fine revenue. A 10 cent decrease in average annual gasoline prices historically leads to about a $22,000 increase in fines.
- Highway Patrol operations reports show that enforcement effort in FY 2016, as measured by patrol miles covered, maintained its post-recession trend of about six million miles per fiscal year.
- Significant changes in Highway Patrol operations, areas of enforcement focus, as well as overall economic activity and fuel prices may raise or lower the level of collections.

Forecast Methodology

The estimate is based on a regression model of revenue as a function of time-trend and actual (and forecast) prior calendar year average gasoline prices. Including the lagged gasoline prices in the modelimproved the model fit (R^2=0.925 and model standard error of $145,000) and accounted for recent increases and decreases in revenue reasonably well. The level of gasoline price may serve as an indicator of the marginal change (relative to trend) in traffic volume and possibly vehicle velocity. Increases in fuel prices above seasonal trend are believed to have a negative effect on discretionary travel. Structurally, collections lag citations as adjudication processes and revenue recording create natural lags in receipts.

The model fit and forecast are presented in Graph 1. Note that the forecast assumes the modeled growth rates are the most probable and centers anticipated collections on FY 2016 actual collections. This represents a 7% hedge — the model predicts revenues that are $280,000 per year higher — this is assumed to be related to driver accommodation to recently increased allowable highway speeds. The graph also shows that revenue tends to increase over time, but revenue growth slows (or declines) after gasoline prices rise rapidly.



Distribution:

All highway patrol fines received by the state are directed to the general fund.

Data Sources

SABHRS provided historical tax revenue. The Highway Patrol provided fiscal year operations reports. Gasoline prices and the gasoline price forecasts are from IHS Markit, October 2016, national forecast.

Revenue Description

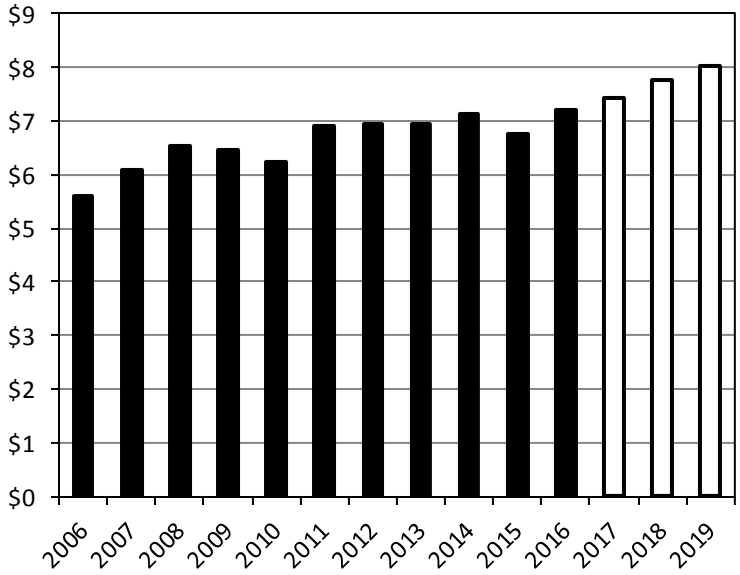
Individuals and firms who plan to sell securities in Montana must register with the State Auditor and pay fees as specified in 30-10-209, MCA. The fee to register as a broker-dealer or investment advisor is $200 a year. The fee for salespersons and representatives working for a broker-dealer or investment advisor is $50.

Newly issued securities not regulated at the federal level, or traded on regulated or self-regulating exchanges, or otherwise exempt from state regulation, must be registered with the State Auditor's Office (SAO). The first year registration fees are $200 plus 0.1% of the issue value over $100,000, up to a maximum fee of $1,000. In succeeding years, the registration may be renewed for a fee of 0.1% of the value of securities to be offered that year with a minimum fee of $200 and a maximum fee of $1,000.

Table 1 shows general fund investment licenses and permits revenue for FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019.

Table 1
Investment Licenses and Permits
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$5.584	7.55%
A 2007	$6.095	9.15%
A 2008	$6.514	6.88%
A 2009	$6.461	-0.81%
A 2010	$6.225	-3.66%
A 2011	$6.922	11.21%
A 2012	$6.961	0.56%
A 2013	$6.951	-0.15%
A 2014	$7.115	2.36%
A 2015	$6.773	-4.80%
A 2016	$7.212	6.48%
F 2017	**$7.433**	**3.06%**
F 2018	**$7.750**	**4.26%**
F 2019	**$8.007**	**3.32%**



Risks and Significant Factors

- Most securities agents and sales representatives registered in Montana do not operate from within the state, but register via the (national) Financial Industry Regulatory Authority (FINRA) clearinghouse which became mandatory in CY 2003 after an initial phase-in period.
- Revenue tends to follow synchronous changes in financial markets.
- Despite an increase in market volatility and a decline in financial sector jobs, securities brokers-dealers and their sales representatives continue to register to do business in Montana in increasing numbers. This is thought to be precautionary registration to avoid unlicensed securities dealing. This trend may end.
- Legislation in 2011 (HB 125) clarified that securities notice fees apply to each class of securities offered in a portfolio. This has raised notice fee collections by approximately $1.5 million per year. To the extent these collections exceed appropriated SAO expenditures, they are transferred to the general fund (and recorded in Other Revenue) at fiscal year-end.
- HB 81 (2011) created a temporary state special revenue fund for securities fraud restitution. These payments are returned to victims of securities fraud subject to application, a cap, and review by a SAO panel. HB 81 in the 2013

session created a source of funding for the securities restitution fund with the allocation of 4.5% of total portfolio fees (approximately $385,000 per year).

- In 2015, three bills (HB 57, HB 481, and HB 554) affected securities regulation, but these had little fiscal impact.

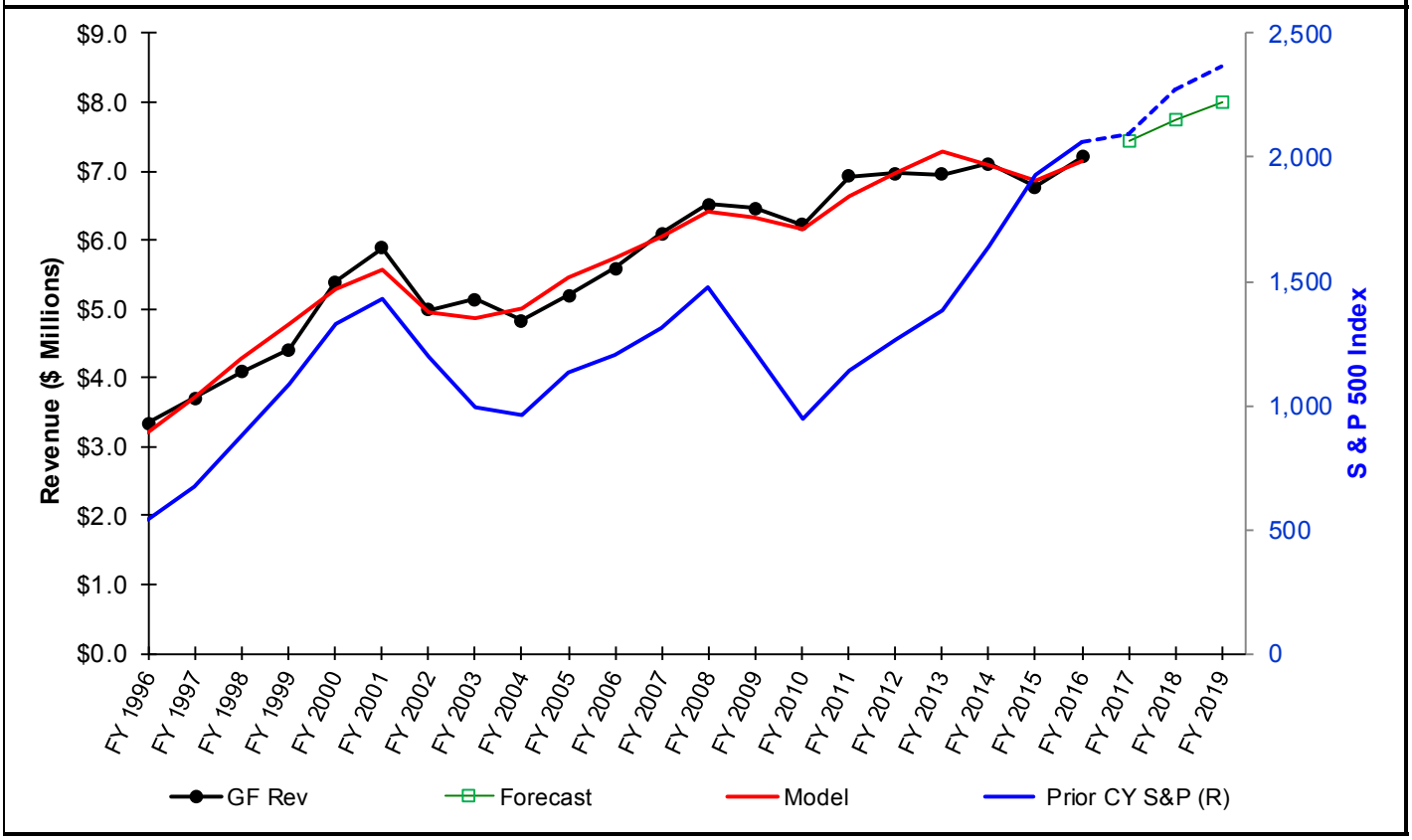
Forecast Methodology

Insurance license and permit revenue is estimated using a regression model of time and the natural log of prior fiscal year performance of the S&P 500 index, with an indicator for FINRA registration. A dummy variable has been added to the model to account for the reclassification of certain fees as of January 2015. The reclassification reduces investment license fee collections and state special revenue securities fees.

The model produces good fit (R^2 of 0.986) and with relatively narrow confidence bounds (standard error of 217,000). A 100-point change in the Standard & Poor index shifts collections by approximately $210,000. The typical annual revenue growth, holding all other factors constant, is approximately $195,000. The model therefore chiefly reflects time trend and the change in the S&P 500 index forecast.

The model fit and forecast are presented in Graph 1. The graph shows that revenues move in concordance with time and financial markets.

Graph 1
Investment License Revenue and Prior Year S&P 500 Average
FY 1996 - FY 2016 and Forecast for FY 2017 - FY 2019



Data Sources

Historical tax revenue is extracted from SABHRS. The Securities Department of the State Auditor's Office provided information on law changes, counts of securities broker-dealers, securities sales representatives, investment advisors, and investment advisor sales representative registrations. The S&P 500 stock index and forecast is from the IHS Markit, October 2016, national forecast.

Public Contractors' Gross Receipts Tax

2019 Biennium

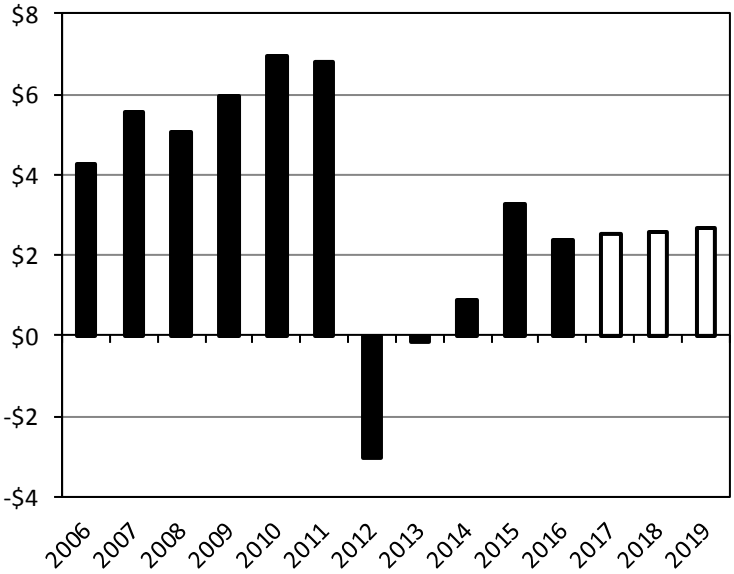
Revenue Description

In accordance with 15-50-205, MCA, a 1% tax is assessed on the gross receipts contractors receive for construction work within Montana for federal, state, or local government projects. Contractors may use the amount of gross receipts tax paid as an offset or credit against either their corporation income tax or their individual income tax. In addition, any personal property taxes paid on property located within Montana and used in the contractor's business may be used to obtain a refund of contractors' gross receipts taxes paid. Any tax not credited or refunded is allocated to the general fund.

Table 1 shows actual general fund revenue from the contractor's gross receipts tax for FY 2006 through FY 2016, and forecast revenue for FY 2017 through FY 2019. General fund revenue was elevated in FY 2009 - FY 2011, likely due to heightened spending on infrastructure projects generated by the America Recovery and Reinvestment Act. General fund receipts were negative in FY 2012 and FY 2013 as refunds outpaced payments. Revenue moved back into positive territory in FY 2014, and grew substantially in FY 2015 with the aid of lower refunds. A decrease in public contracts in FY 2016 led revenue lower in that year.

Table 1
Contractors' Gross Receipts Tax
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$4.275	202.95%
A 2007	$5.567	30.23%
A 2008	$5.063	-9.06%
A 2009	$5.930	17.13%
A 2010	$6.969	17.53%
A 2011	$6.803	-2.38%
A 2012	-$3.042	-144.71%
A 2013	-$0.138	95.48%
A 2014	$0.887	744.7%
A 2015	$3.257	267.13%
A 2016	$2.397	-26.38%
F 2017	**$2.510**	**4.68%**
F 2018	**$2.580**	**2.80%**
F 2019	**$2.664**	**3.24%**



Risks and Significant Factors

- The level of contractors' gross receipts tax is dependent on the amount of public construction contracts available from federal, state, and local government. Federal and state contracts provide the bulk of work for public contractors. Increases in public infrastructure investment in Montana increase the size and number of public contracts and lead to higher tax collections.
- The balance between the value of the public contract and the amount of property taxes and vehicle taxes paid on the equipment used for the construction work influences the amount of gross receipts tax due to the general fund. If a lot of equipment is used for a relatively small value contract, it is possible for the contractor to receive a refund instead of owing tax, which is a negative draw on general fund revenue.
- Economic conditions and public policy influence the amount of spending governments allocate to public infrastructure. Spending can increase in both good economic times and bad economic times, and public policy is often dictated by the political makeup of governing bodies.

Forecast Methodology

There are three steps used when calculating public contractor's gross receipts tax revenue:

Step 1. Estimate gross tax receipts based on the expected value of public contracts. The total value of public contracts is divided into two categories, contracts supplied by the Montana Department of Transportation (MDT) and contracts supplied by other entities, which include federal government contracts. MDT contracts exhibited an increasing trend from FY 2006 - FY 2012, but have flattened out in recent years. Other contract payments historically have fluctuated more than MDT contract payments over the years. Payments from other contracts appear to have been heavily influenced by federal stimulus funds in FY 2009 and FY 2010.

MDT contract payments are forecast using a linear exponential smoothing model, and are estimated to grow at a consistent rate over the forecast period. Other contract payments are projected forward using a three-year moving average, and are expected to remain in the same range as they have over the past four years.

Step 2. Forecast total tax credits and refunds. To estimate total credits and refunds for each year in the forecast period, the sum of MDT contract and other contract payments are multiplied by the estimated ratio of credit and refund payments to contract payments. The sum of credits and refunds from 2006 through 2016 is divided by the sum of total contract payments from 2006 through 2016 to get the average historical ratio of credit and refund payments to contract payments.

Step 3. Calculate the tax liability for the fiscal year and add the amount of credits and refunds to obtain general fund revenue.

Table 2 shows actual gross receipts from MDT and other contractors' payments, total credits and refunds, and general fund revenue for FY 2006 through FY 2016. Forecast values are shown for FY 2017 through FY 2019.

Table 2
Gross Receipts, Refunds, and Credits
($ millions)

Fiscal Year	MDT	Other	Credits and Refunds	General Fund
A 2006	$254.39	$361.38	($1.88)	$4.27
A 2007	$262.78	$570.78	($2.77)	$5.57
A 2008	$271.91	$424.51	($1.90)	$5.06
A 2009	$290.29	$538.45	($2.36)	$5.93
A 2010	$327.79	$560.46	($1.91)	$6.97
A 2011	$329.75	$350.58	$0.00	$6.80
A 2012	$368.23	$138.58	($8.11)	($3.04)
A 2013	$306.05	$110.11	($4.30)	($0.14)
A 2014	$324.84	$115.88	($3.52)	$0.89
A 2015	$335.65	$112.45	($1.22)	$3.26
A 2016	$295.29	$152.84	($2.08)	$2.40
F 2017	**$322.60**	**$127.06**	**($1.99)**	**$2.51**
F 2018	**$331.49**	**$130.79**	**($2.04)**	**$2.58**
F 2019	**$340.37**	**$136.90**	**($2.11)**	**$2.66**

Data Sources

Gross tax receipts, tax credits, refunds, and net general fund collections were obtained from SABHRS.

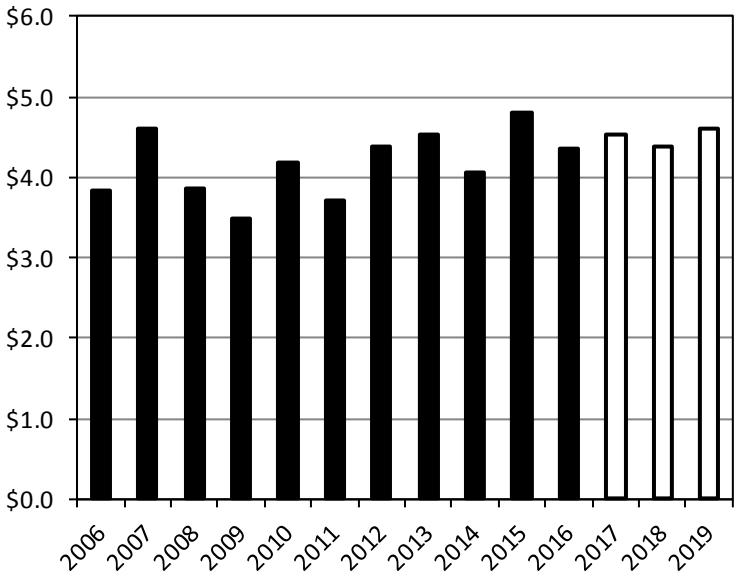
Revenue Description

Fees for driver's licenses, commercial driver's licenses, and motorcycle endorsements are set in 61-5-111, MCA. The fee for replacing a lost or destroyed license is set in 61-5-114, MCA. The distribution of revenue from driver's license fees is set in 61-5-121, MCA. Counties retain a small percentage of the fees they collect.

Table 1 shows general fund revenue from driver's license fees for FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019.

Table 1
Driver's License Fees
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$3.828	13.50%
A 2007	$4.611	20.43%
A 2008	$3.866	-16.15%
A 2009	$3.478	-10.02%
A 2010	$4.169	19.86%
A 2011	$3.711	-10.99%
A 2012	$4.369	17.72%
A 2013	$4.527	3.61%
A 2014	$4.051	-10.51%
A 2015	$4.811	18.76%
A 2016	$4.345	**-9.69%**
F 2017	**$4.539**	**4.47%**
F 2018	**$4.370**	**-3.72%**
F 2019	**$4.598**	**5.21%**



Basic fees for driver's licenses are five dollars per year of validity. Additional fees are charged for motorcycle endorsements ($0.50 per year). Commercial driver's licenses ($10 per year for inter-state and $8.50 per year for intra-state licenses) are valid for a five-year period and include basic driving privileges that run concurrently with the commercial license. Reduced fees are available to active military personnel for basic driver's licenses and motorcycle endorsements. Replacement licenses are $10. A $0.50 renewal notice fee is charged at issue of a license. Most license fees were revised by the 2003 Legislature. The validity of commercial drivers' licenses was reduced to five years and HB 192 revised fee distributions (2005 session). There was a correction to the distribution of fees by the 2007 Legislature in HB 23. In the 2015 session, there were no changes to drivers' licensing regulations.

Risks and Significant Factors

- Revenue swings between fiscal years are principally due to the continued effects of the transition from four-year to eight-year licensing. While transition rules were in place to reduce large declines in revenue, peak-to-trough variations emerged as drivers' apparently actively sought eight-year licenses.
- The amplitude of the swing grew with fee changes in FY 2003. These effects have persisted despite completion of the second eight-year cycle of license renewals in 2015.
- First year restrictions for drivers 18 years of age and under, which began in FY 2006, have lengthened the transition to full licensure and reduced the number of drivers 16 and under. An examination of drivers' records suggests that this has not materially reduced driver's license revenue.

- The average driver age in Montana is rising and the growth of the core driving age cohort (20-74 years of age) is slowing. The growth of this age cohort is currently 0.8% and is expected to drop to 0.3% by the end of fiscal 2019.

Forecast Methodology

Forecasting general fund driver's license fee revenue:

Step 1: Calculate the average effective licensing fee for basic licenses by dividing the number of renewal notices by the basic license collections. The estimate of the number of driver's licenses issued in any given year, is proxied by the renewal notices issued each fiscal year starting in FY 2006.

Step2: Forecast the number of licenses to be issued. The estimate of fiscal year drivers' licenses' to be issued is calculated by taking the average of the prior sixth and seventh year of the licensing cycle and growing the number by the expected age-cohort growth rate.

Step 3: Project the effective average licensing fees for basis drivers' licenses. This is done by taking the three-year moving average.

Step 4: Project total basic driver's license revenue by multiplying projected driver's licenses by expected fees

The results of Steps 1 through 4 are summarized in Table 2:

Table 2
Estimate of Basic Driver's License Collections

Fiscal Year	Standard Driver's License Fees		Effective Average Fee		Renewal Notices		Forecast Std. License Total Revenue
A 2008	$3,961,623	÷	$34.17	=	115,938		
A 2009	$3,542,739	÷	$32.95	=	107,517		
A 2010	$4,238,408	÷	$32.48	=	130,477		
A 2011	$3,579,561	÷	$30.89	=	115,866		
A 2012	$4,157,011	÷	$30.68	=	135,507		
A 2013	$4,496,604	÷	$31.44	=	143,000		
A 2014	$4,147,865	÷	$32.66	=	127,015		
A 2015	$4,948,388	÷	$31.55	=	156,849		
A 2016	$4,292,889	÷	$31.61	=	135,801		
F 2017			**$31.94**	x	**141,633**	**=**	**$4,523,618**
F 2018			**$31.70**	x	**137,388**	**=**	**$4,355,155**
F 2019			**$31.75**	x	**144,312**	**=**	**$4,581,926**

Step 5: Estimate revenue from other licenses. Commercial driver's license, motorcycle endorsement, and replacement license revenues are projected based on their respective seven-year Olympic average proportions relative to basic driver's license revenue. These estimates are reported in Table 3. Because a few counties retain a portion of the driver's license fee when they issue driver's licenses on behalf of the Motor Vehicles Division, and this retention is not reported in SABHRS, the amount is estimated and added back to the calculation of total license and fee revenue based on the FY 2016 proportion.

Table 3
Driver's License Total Revenue by Fee Type
($ millions)

Fiscal Year	Basic Driver's Licenses	Commercial Licenses	Motorcycle Endorsements	Replacement Licenses	Renewal Fee	Total Revenue	Estimate of county retention
A 2010	$4.238	$0.529	$0.050	$0.309	$0.065	$5.192	$0.013
A 2011	$3.580	$0.627	$0.041	$0.315	$0.058	$4.620	$0.013
A 2012	$4.157	$0.841	$0.050	$0.328	$0.068	$5.444	$0.018
A 2013	$4.497	$0.699	$0.052	$0.331	$0.071	$5.650	$0.018
A 2014	$4.148	$0.425	$0.040	$0.341	$0.064	$5.017	$0.009
A 2015	$4.948	$0.557	$0.055	$0.359	$0.078	$5.998	$0.000
A 2016	$4.293	$0.623	$0.045	$0.374	$0.068	$5.402	$0.000
Relative Proportion							
A 2010	1.000	0.125	0.01184	0.0730	0.01539	1.2251	0.0031
A 2011	1.000	0.175	0.01137	0.0881	0.01618	1.2908	0.0037
A 2012	1.000	0.202	0.01211	0.0788	0.01630	1.3096	0.0044
A 2013	1.000	0.155	0.01152	0.0736	0.01590	1.2564	0.0040
A 2014	1.000	0.102	0.00975	0.0821	0.01531	1.2096	0.0023
A 2015	1.000	0.113	0.01102	0.0726	0.01585	1.2121	0.0000
A 2016	1.000	0.145	0.01038	0.0871	0.01582	1.2584	0.0000
Olympic Avg. Proportion		**0.143**	**0.011**	**0.079**	**0.016**	**1.249**	**0.0000**
All Fund Revenue by License Type							
A 2010	$4.238	$0.529	$0.050	$0.309	$0.065	$5.192	$0.013
A 2011	$3.580	$0.627	$0.041	$0.315	$0.058	$4.620	$0.013
A 2012	$4.157	$0.841	$0.050	$0.328	$0.068	$5.444	$0.018
A 2013	$4.497	$0.699	$0.052	$0.331	$0.071	$5.650	$0.018
A 2014	$4.148	$0.425	$0.040	$0.341	$0.064	$5.017	$0.009
A 2015	$4.948	$0.557	$0.055	$0.359	$0.078	$5.998	$0.000
A 2016	$4.293	$0.623	$0.045	$0.374	$0.068	$5.402	$0.000
F 2017	**$4.524**	**$0.645**	**$0.051**	**$0.357**	**$0.072**	**$5.648**	$0.000
F 2018	**$4.355**	**$0.621**	**$0.049**	**$0.344**	**$0.069**	**$5.438**	$0.000
F 2019	**$4.582**	**$0.653**	**$0.051**	**$0.362**	**$0.073**	**$5.721**	$0.000

Step 6: Allocate statutory distributions of revenue to the state traffic education and state motorcycle safety accounts, by type of licensing revenue. The remainder is distributed to county or state general funds. The basis for distributing fees for each license is shown in Table 4 as set by 61-5-121, MCA.

Table 4 Driver's License Fee Allocation				
	Basic Driver's License	Commercial Licenses	Motorcycle Endorsement	Replacement License
State General Fund (remainder)	76.80%	80.56%	33.20%	87.50%
State or County General Fund[1]	2.50%	2.50%	3.34%	3.75%
Traffic Safety Education	20.70%	16.94%	0.00%	8.75%
Motorcycle Safety Training	0.00%	0.00%	63.46%	0.00%
	100.00%	100.00%	100.00%	100.00%

[1] County general fund receives the distribution if the license is issued at a county office (vs. a MVD office).

The estimates from the bottom of Table 3 are multiplied by the corresponding distribution percentage listed in Table 4 to estimate driver's license receipts allocated to each state special revenue account and to the state general fund. Counties only receive a distribution if they issue the license. The county retention is estimated to be less than $500. The state special revenue distributions along with the general fund are presented in Table 5. The general fund portion is also presented in Table 1.

Table 5 Allocation of Driver's License Fee Revenue ($ millions)					
Fiscal Year	General Fund	Traffic Safety Education	Motorcycle Safety Training	County Retention	Total
A 2016	$4.347	$1.027	$0.028	$0.000	$5.402
F 2017	**$4.539**	**$1.077**	**$0.032**	**$0.000**	**$5.648**
F 2018	**$4.370**	**$1.037**	**$0.031**	**$0.000**	**$5.438**
F 2019	**$4.598**	**$1.091**	**$0.033**	**$0.000**	**$5.721**

Data Sources

Historical revenue data by license type is from SABHRS. Montana population estimates are from the IHS Markit, July 2016 state forecast.

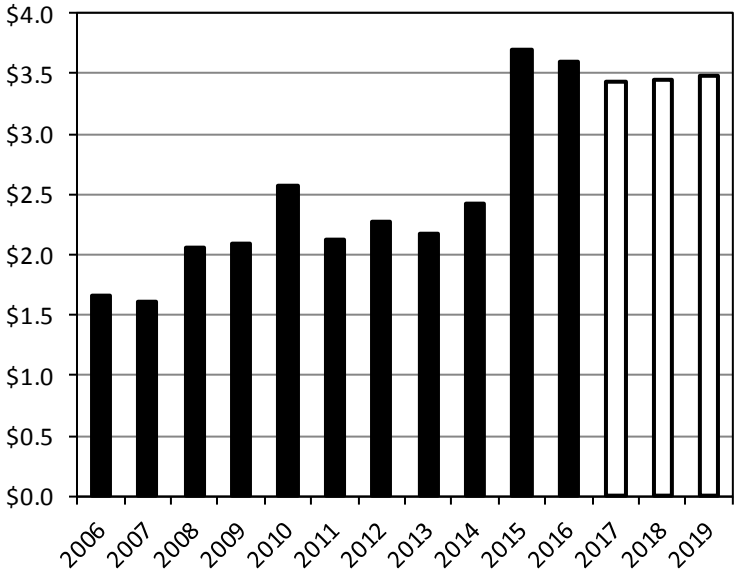
Revenue Description

Section 15-23-101, MCA, provides for the central assessment of rail car companies' operating properties. The tax is computed by multiplying the assessed value of the Montana allocated share of the national rail car fleet by the Class 12 tax rate, and that taxable value of Montana property by the average statewide mill levy for commercial and industrial property defined in 15-23-211, MCA.

Table 1 presents actual general fund revenue from the rail car tax for FY 2006 though FY 2016 and forecast for FY 2017 through FY 2019. (FY 2017 revenues are essentially known since the FY 2017 tax bills are issued at the end of October 2016).

Table 1
Rail Car Tax
($ millions)

Fiscal Year	General Fund	Percent Change
A 2006	$1.667	5.20%
A 2007	$1.615	-3.17%
A 2008	$2.064	27.84%
A 2009	$2.099	1.72%
A 2010	$2.579	22.85%
A 2011	$2.130	-17.41%
A 2012	$2.273	6.72%
A 2013	$2.179	-4.15%
A 2014	$2.418	10.97%
A 2015	$3.706	53.28%
A 2016	$3.594	-3.02%
F 2017	**$3.437**	**-4.38%**
F 2018	**$3.457**	**0.59%**
F 2019	**$3.487**	**0.86%**



Risks and Significant Factors

- The national economic recovery and increasing train traffic has led to a recent increase in tax billings. Investment in new rolling stock is growing the value of the national fleet.
- The trade, grain, coal, and oil traffic increased Montana's share (in value terms) of the national rail car fleet. Rail car company billings for FY 2015 reflect the bulk of this change. The recent reduction in commodity prices, coal demand, and oil pipeline expansion are anticipated to reduce traffic.
- The class 12 tax rate is the effective weighted average rate that applies to all commercial and industrial property in the state. Therefore, the rate is affected by commercial and industrial property tax reductions. Recent reductions including the *Gold Creek* Supreme court decision on intangible personal property, class 13 protest settlements, biennial reappraisal of class 4 commercial property, along with the SB 372 (2011) and SB 96 (2013) reductions to class 8 tax rates, are anticipated to stabilize and lower the class 12 tax rate in the future.
- The tax reductions may also raise statewide average commercial and industrial mill rates. The trend statewide commercial and industrial average mill levy growth rate (1.1%) is used in this estimate. If tax rate reductions raise mill levies more than anticipated, they would increase state general fund rail car tax revenue.
- Because tax year (TY) 2016 rail car tax bills are mailed in October, the tax liability for FY 2017 is known.

Forecast Methodology

Step 1. Forecast the allocated market value of rail car companies operating in Montana. The (outlier adjusted) trend growth in the national rail car fleet value is projected and the Montana allocated share of that market value of all railcars is held constant at its TY 2016 level (0.52%).

Step 2. Apply the estimates of class 12 tax rates. These are estimated based on the simple trend rate of change (-1.3%) and as such, this estimate decouples from the property tax estimate's class 12 tax rate. The class 12 tax rate incorporates the effective weighted average of the tax rates that apply to all commercial and industrial property statewide.

Step 3. Estimate the average statewide mill levy for commercial and industrial property. Mills are expected to grow at trend rates in the future (1.0%).

Step 4. Calculate general fund revenue. Table 2 presents the forecast of allocated market value, class 12 tax rate, the estimated statewide average commercial and industrial property mill levy, and the resulting general fund tax revenue forecast. Rail car tax collections show the recent surge for FY 2015 then return to the long-term trend over the forecast period.

Table 2
Calculation of Rail Car Tax Revenue
($ millions)

Description	FY 2014 Actual	FY 2015 Actual	FY 2016 Actual	**FY 2017 Projected**	**FY 2018 Projected**	**FY 2019 Projected**
Total Montana Allocated Value	$129.492	$206.975	$221.097	**$209.404**	**$211.382**	**$213.360**
Multiplied by Class 12 Tax Rate	3.28%	3.25%	2.97%	**3.04%**	**3.00%**	**2.96%**
Taxable Value	$4.247	$6.736	$6.567	**$6.366**	**$6.341**	**$6.315**
Multiplied by Mill Levy	537.52	536.28	544.85	**538.09**	**543.40**	**550.30**
Calculated Tax	$2.283	$3.612	$3.578	$3.425	$3.446	$3.475
Penalty and Intrest (residual)	$0.000	$0.094	$0.012	**$0.012**	**$0.012**	**$0.012**
General Fund Revenue	$2.418	$3.612	$3.589	**$3.437**	**$3.457**	**$3.487**

Distribution

The general fund receives 100% of rail car tax revenue.

Data Sources

Historical tax revenue is from SABHRS. The summary rail car tax database (TY 2003 – TY 2016), class 12 tax rates for TY 2003 – TY 2016, and statewide average commercial and industrial mill levies for TY 2003 – TY 2016 were provided by the Department of Revenue.

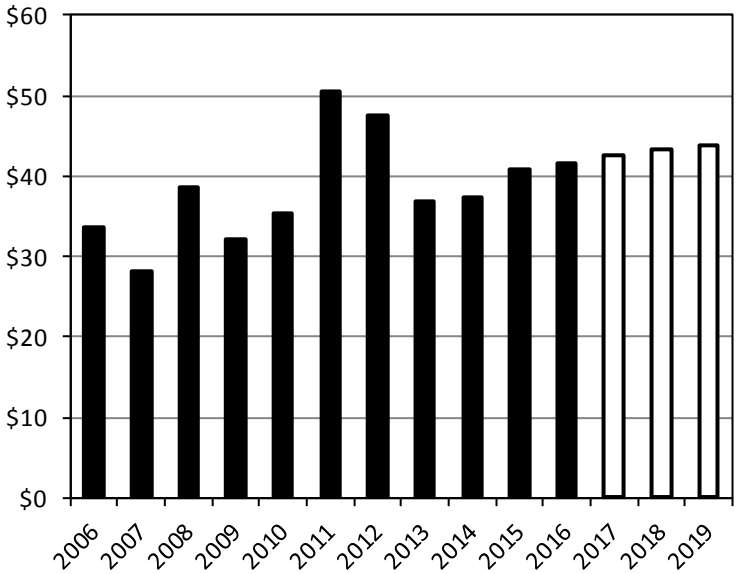
Revenue Description

Other revenue represents the sources of general fund revenue that do not have an individual line item in the revenue estimating resolution. Other revenue includes some one-time revenue that has been as large as $16.3 million in FY 2011 and $8.4 million in FY 2008. There were no anomalies in the FY 2016 receipts. An average of $1.5 million per year is used to forecast one-time revenue going forward.

Table 1 shows actual general fund revenue from FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019.

Table 1
Other Revenue
($ millions)

	Fiscal Year	General Fund	Percent Change
A	2006	$33.640	-13.51%
A	2007	$28.177	-16.24%
A	2008	$38.566	36.87%
A	2009	$32.141	-16.66%
A	2010	$35.454	10.31%
A	2011	$50.420	42.21%
A	2012	$47.486	-5.82%
A	2013	$36.785	-22.53%
A	2014	$37.441	1.78%
A	2015	$40.822	9.03%
A	2016	$41.444	1.52%
F	**2017**	**$42.518**	**2.59%**
F	**2018**	**$43.292**	**1.82%**
F	**2019**	**$43.679**	**0.89%**



Risks and Significant Factors

- State legislative and national congressional action may have a significant impact on "other revenue".
- Many small variances over a large number of revenue categories may have a significant aggregate effect.

Forecast Methodology and Projection Calculation

The general fund "other revenue" is forecast in four steps:

Step 1. Estimate future one-time revenue.

- In FY 2008, the sale of the armory in Missoula for $3.5 million; unused funds from the *Jobs and Growth Tax Relief Act* totaling $2.5 million, and HB 4 (May 2007 special session) funded $2.5 million for the Miles City Readiness Center from the long range building fund. The Department of Military Affairs received funding from the federal government and as a result of specific wording in HB 4, $2.4 million was returned to the general fund in FY 2008.
- In FY 2010, there was a non-budgeted transfer from the Department of Administration for $0.371 million. However, this transfer was largely overshadowed by a negative $1.2 million accounting correction made by the Department of Justice related to the implementation of the MERLIN system.

Step 2: Isolate and estimate large sources of other revenue.

- The sale of abandoned property is from financial accounts that have gone dormant and are forwarded to the state. Historically, this revenue is up and down like this during each biennium.

Step 3: Isolate and estimate smaller sources of revenue.

- There are many small sources of revenue that are forecast individually. These sources are projected like the larger sources of revenue; they are assessed for law changes and forecast based on trends or discussions with agencies.

Step 4: Estimate the remaining revenue as a group and sum the four categories. The general fund revenue that is not classified in one of the three previous groups is estimated as a single group.

Table 2 shows revenue to the general fund that is categorized as one-time revenue.

Table 2
One Time General Fund Revenue
($ millions)

Fiscal Year	One Time Revenue	Percent Change
A 2006	$1.061	-77.09%
A 2007	$0.097	-90.89%
A 2008	$8.387	8570.78%
A 2009	$0.464	-94.47%
A 2010	-$0.863	-285.94%
A 2011	$16.324	1991.41%
A 2012	$3.450	-78.87%
A 2013	$2.030	-41.16%
A 2014	$0.649	-68.04%
A 2015	$0.588	-9.32%
A 2016	$1.330	126.19%
F 2017	**$1.500**	**12.75%**
F 2018	**$1.500**	**0.00%**
F 2019	**$1.500**	**0.00%**

No extraordinary events are forecast at this time and one-time revenue is anticipated to be $1.5 million each year for FY 2017 through FY 2019.

Table 3 shows additional large sources of other revenue. Collections are projected by examining historical deposits to determine whether there is a trend or other pattern in receipts.

Table 3 Large Individual Sources of Other Revenue ($ millions)						
Source of Revenue	FY 2014	FY 2015	FY 2016	**FY 2017**	**FY 2018**	**FY 2019**
Fire Reimbursement	$0.000	$0.000	$0.000	**$0.000**	**$0.000**	**$0.000**
Abandoned Property	$8.957	$9.781	$6.739	**$8.492**	**$8.492**	**$8.492**
Clerk of Court Fees	$3.275	$3.203	$3.425	**$3.425**	**$3.425**	**$3.425**
Vet's Home Transfer	$4.157	$3.215	$3.562	**$3.562**	**$3.562**	**$3.562**
Portfolio Transfer	$5.287	$6.294	$6.831	**$7.041**	**$7.774**	**$8.085**
Vehicle and Driving Records	$2.295	$2.105	$2.380	**$2.380**	**$2.380**	**$2.380**
SWCAP	$2.879	$2.907	$2.971	**$2.729**	**$2.729**	**$2.729**
HB 536 Criminal Surcharge	$1.449	$1.425	$1.419	**$1.457**	**$1.457**	**$1.457**
Bentonite Production	$0.161	$0.206	$0.269	**$0.269**	**$0.269**	**$0.269**
Estate Tax	$0.004	$0.000	$0.000	**$0.000**	**$0.000**	**$0.000**
Driver's License Reinstatement	$1.212	$1.226	$1.135	**$1.198**	**$1.198**	**$1.198**
Implementation of Stimulus	$0.000	$0.000	$0.000	**$0.000**	**$0.000**	**$0.000**
DOA Administrative Expense	$1.614	$1.677	$1.736	**$1.788**	**$1.841**	**$1.896**
Total	$31.291	$32.039	$30.468	**$32.341**	**$33.128**	**$33.494**

Table 4 shows the four different revenue categories that make up general fund other revenue for FY 2006 through FY 2016 and forecast revenue for FY 2017 through FY 2019.

Table 4 All Other Revenue Sources ($ millions)					
Fiscal Year	One Time	Large Sources	Smaller Sources	Estimated as a group	Total
A 2006	$1.061	$24.440	$7.799	$0.445	$33.745
A 2007	$0.097	$21.616	$5.882	$0.582	$28.177
A 2008	$8.387	$22.873	$6.935	$0.371	$38.566
A 2009	$0.464	$24.401	$6.652	$0.623	$32.141
A 2010	($0.863)	$29.890	$5.679	$0.749	$35.454
A 2011	$16.324	$27.516	$3.934	$2.661	$50.434
A 2012	$3.450	$29.693	$4.840	$1.677	$39.660
A 2013	$2.030	$26.449	$4.585	$3.797	$36.861
A 2014	$0.649	$31.291	$4.431	$0.973	$37.344
A 2015	$0.588	$32.039	$4.003	$4.225	$40.855
A 2016	$1.330	$30.468	$5.148	$4.583	$41.529
F 2017	**$1.500**	**$32.341**	**$5.116**	**$3.561**	**$42.518**
F 2018	**$1.500**	**$33.128**	**$5.103**	**$3.561**	**$43.292**
F 2019	**$1.500**	**$33.494**	**$5.123**	**$3.561**	**$43.679**

Data Sources

SABHRS Report MTGL0109 and SABHRS Data Mine provided historical revenue.

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

NON-GENERAL FUND REVENUE SECTION 10

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

School Trust Land Interest and Income

2019 Biennium

Revenue Description

The United States Congress granted public lands to the State of Montana by the Enabling Act in 1889 to provide income to support public schools. The Enabling Act also granted smal ler amounts of land to other st ate institutions. The land grants have been supplemented over time through gifts to the state, reversions of unclaimed property, and subsequent acts.

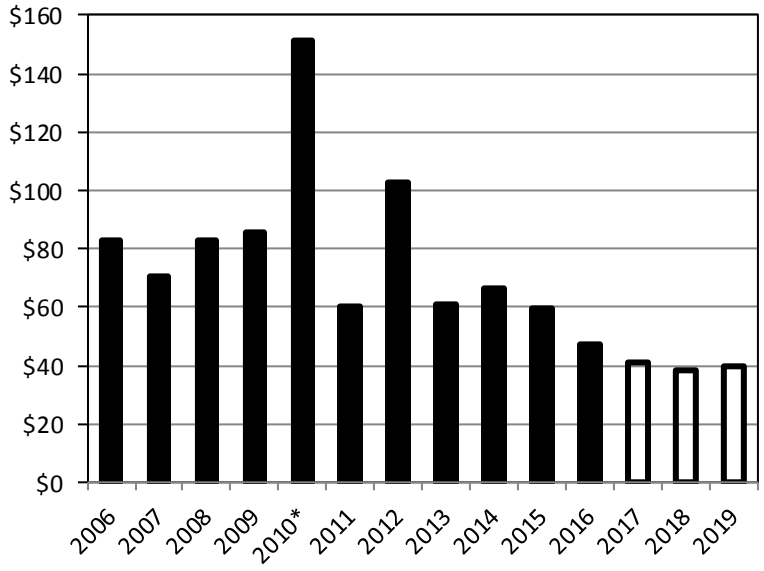
Proceeds from property sales of the granted land are deposited into an inviolate trust fund; thus, the proceeds are non-distributable. The trust fund is invested, almost exclusively, in the Trust Fund Investment Pool (TFIP). Of the interest income and other income from the trust lands, 5% percent is retained by the trust fund corpus, and 95% of the interest earned by th e trust fun d is con sidered distrib utable. T he di stributable in come from the common school trust la nd is deposited in the state special revenue guarantee account for spending on public schools. The distributable income from the other t rust land s go es to state special revenue accou nts. Co sts of ad ministering state land s a re deduc ted fro m allocations of the income. An amount is also deducted and put into a reserve fund in the event revenues do not meet the required expenses in a given fiscal year, but will be greater than the costs given a longer time period.

Table 1 sho ws actual dist ributable income from the Common School Trust for FY 2006 thro ugh FY 2016 and foreca st revenue for FY 2017 through FY 2019.

The large increase in revenue in FY 2010 is due to the bonus payment of the Otter Creek coal tracks. The lower level in FY 2011 is due to the changing distribution of mineral royalties to the trust fund corpus rather than common schools. This change became effective toward the end of FY 2010.

Table 1
School Trust Land Interest and Income
($ millions)

Fiscal Year	Revenue	Percent Change
A 2006	$82.606	21.41%
A 2007	$70.429	-14.74%
A 2008	$83.026	17.89%
A 2009	$85.385	2.84%
A 2010*	$151.034	76.88%
A 2011	$60.144	-60.18%
A 2012	$102.391	70.24%
A 2013	$61.098	-40.33%
A 2014	$66.194	8.34%
A 2015	$59.833	-9.61%
A 2016	$47.053	-21.36%
F 2017	**$40.832**	**-13.22%**
F 2018	**$38.604**	**-5.46%**
F 2019	**$40.055**	**3.76%**



School interest and income was deposited in the ge neral fund through FY 2001. A new stat e special revenue account, the gua rantee accou nt, was cre ated in SB 495 (20 01 se ssion) and ame nded in HB 7 (2 002 spe cial session) to b e statutorily appropriated. Beginning in FY 2002, sch ool trust interest and in come has b een deposited in the guara ntee account rather than the general fund.

Revenue increased in FY 2002, because SB 495 resulted in a loan of $46 million from the coal trust to the school trust fund. The higher school trust fund balance increased interest earnings. SB 495 also allowed $138.9 million in net mineral royalties to be distributed to common schools rather than to the trust fund corpus. That limit was reached in FY 2010 and mineral royalty revenue is deposited into the trust fund corpus to generate interest revenue.

HB 152 (2009 session) directed all of revenue generated from timber harvested in the state on common school trust lands over 18 million board feet, as well as 95% of the revenue from river bed leases, be deposited in the state special revenue school facility and technology improvement account. However, the change in distribution of revenue from riverbed rents did not take effect until FY 2015.

SB 65 (2009 session) consolidated four accounts that were used to pay for the administration of the trust fund into a single account. It also allowed for the diversion of up to 25% of the prior year's distributable revenue to be deposited into the trust administration account (TAC) for the Department of Natural Resources and Conservation (DNRC) administrative costs. In the event costs were less than what was distributed to the TAC, then up to 1/3 of the excess would be deposited into a newly created reserve account. Money in the reserve account would then be used to cover administrative costs in the event there were inadequate funds in the TAC account to cover all costs. The remaining revenue would be deposited in the trust fund corpus to generate interest. The balance in the earnings reserve fund may not exceed 200% of the appropriation to the TAC account from the prior fiscal year.

Risks and Significant Factors

- In FY 2008, the State of Montana reached an agreement in settlement of litigation under Montana's Hydroelectric Resources Act. The annual fees represent the state's share of net benefits the trust land riverbeds contribute to the hydroelectric project as a whole. Two lease agreements were executed. One agreement is currently being contested and the case is working through the court systems.
- Trust revenue is net of administration costs of DNRC. If DNRC's costs vary from expectations, then common school revenue could also be greater or less than anticipated.

Forecast Methodology

Step 1. Total interest earnings from the trust and legacy fund are based on interest rate forecasts described in the *Interest Rate Introduction* section.

Step 2. The Common School portion of the total trust fund is then estimated and applied to yield interest income.

Step 3. Agricultural and grazing rentals are determined based on projections provided by the DNRC and historical projection patterns.

Step 4. School trust non-royalty mineral income is based on projections provided by the DNRC and historical projection patterns.

Step 5. Timber revenue is based on projections by DNRC, long-term trends, and executive budget recommendations. The price of timber, along with decisions about the amount of land to be harvested, could have an effect on trust land revenue.

Step 6. Mineral revenue is calculated based on projections provided by the DNRC and historical projection patterns.

Step 7. All other revenue to the common school trust is forecast based on communication with DNRC and long-term trends.

Step 8. All the pieces are added together and distributed appropriately.

Table 2 shows forecast gross revenue, estimated administrative expenses, allocation, and net revenue to schools for FY 2017 through FY 2019.

Table 2
School Trust Income Allocation and Distribution
($ millions)

Fiscal Year	FY 2017	FY 2018	FY 2019
Investment Income	$21.500	$21.500	$21.700
Agriculture and Grazing Rents	$25.120	$23.800	$25.200
Mineral Management	$1.764	$1.352	$1.007
Forest Management	$3.256	$2.372	$2.568
Licenses and Other Income	$3.165	$3.425	$3.466
Subtotal	**$54.805**	**$52.450**	**$53.941**
Expenses			
Trust Land Administration Account	$11.574	$11.446	$11.487
Subtotal	**$43.232**	**$41.004**	**$42.455**
Permanent Fund			
5% to permanent fund	$2.400	$2.400	$2.400
Total Revenue to Guarantee Account	$40.832	$38.604	$40.055

Data Sources

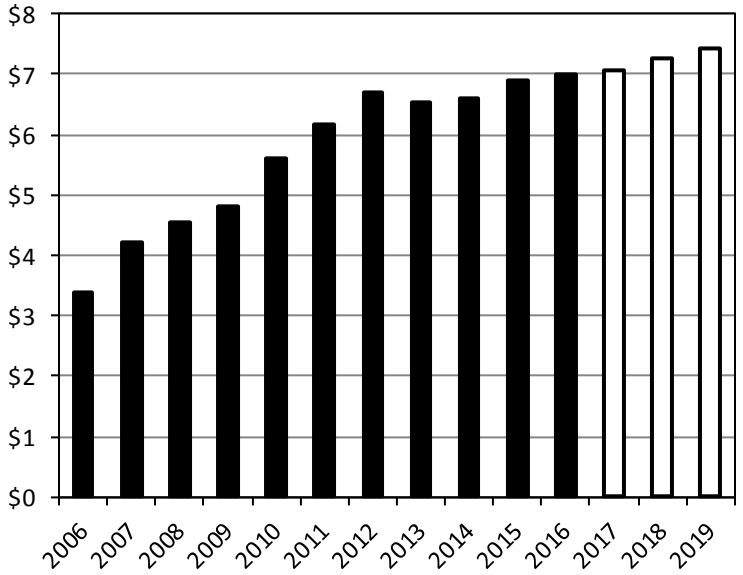
Interest income information was collected from SABHRS and other projections were attained from DNRC.

Revenue Description

Montana receives payments from a multi-state settlement with tobacco companies. Forty percent of the receipts from this settlement are deposited in the tobacco settlement trust. Ten percent of interest earnings from this trust fund are retained in the trust and 90% are deposited in a special revenue account and may be appropriated by the Legislature for tobacco prevention and health care programs (17-6-603, MCA).

Table 1
Tobacco Settlement Trust Interest
($ millions)

	Fiscal Year	Revenue	Percent Change
A	2006	$3.388	5.8%
A	2007	$4.208	24.2%
A	2008	$4.546	8.0%
A	2009	$4.825	6.1%
A	2010	$5.599	16.0%
A	2011	$6.173	10.3%
A	2012	$6.701	8.6%
A	2013	$6.526	-2.6%
A	2014	$6.592	1.0%
A	2015	$6.916	4.9%
A	2016	$7.009	1.3%
F	**2017**	**$7.052**	**0.6%**
F	**2018**	**$7.279**	**3.2%**
F	**2019**	**$7.431**	**2.1%**



The tobacco settlement trust was established in January 2001, following passage of Constitutional Amendment 35 in the November 2000 election. Spendable interest is the portion of tobacco trust interest that is not retained by the trust. Tobacco trust interest revenue grows because the trust fund balance increases with the settlement payments made each year.

Forecast Methodology and Significant Factors

Strategic contribution payments to states from participating manufacturers ends after the 2017 sales year. Historically, the strategic payment has amounted to about over $12 million per year transferred to the corpus of the trust.

There are three steps to forecasting interest revenue from the tobacco trust fund:

Step 1. The annual average balance of the fund is projected. The fund balance increases yearly as 40% of the tobacco settlement payments and 10% of the interest earned on the fund balance are deposited into the trust fund.

Step 2. The annual average balance by investment type is projected. The fund balance is invested in the short-term investment pool (STIP) and the trust fund investment pool (TFIP). STIP and TFIP are managed by the Board of Investments (BOI) and forecasts of annual rates of return for STIP and TFIP are explained in the *Interest Rates Introduction*.

Step 3. Interest earnings are forecast by multiplying the tobacco trust fund balance by the projected average interest rate. The STIP and TFIP interest rates are expected to change throughout the 2019 biennium, as described in the *Interest Rates Introduction*. However, total tobacco trust fund income will continue to increase each year

because the increasing trust fund balance offsets lower interest rates, to the extent that lower interest rates are realized.

Distributions

Table 2 summarizes actual and projected interest earnings and the allocation of interest earnings from FY 2007 through FY 2019. Ten percent of tobacco trust earnings are retained by the trust and 90% are allocated to a state special revenue account.

Table 2
Tobacco Trust Interest Revenue Distribution
($ millions)

Fiscal Year	Reinvested Revenue (10%)		Remaining Revenue (90%)		Total Interest Revenue
A 2007	$0.421	+	$3.787	=	$4.208
A 2008	$0.455	+	$4.091	=	$4.546
A 2009	$0.483	+	$4.343	=	$4.825
A 2010	$0.560	+	$5.039	=	$5.599
A 2011	$0.617	+	$5.556	=	$6.173
A 2012	$0.670	+	$6.031	=	$6.701
A 2013	$0.653	+	$5.873	=	$6.526
A 2014	$0.659	+	$5.933	=	$6.592
A 2015	$0.692	+	$6.224	=	$6.916
A 2016	$0.701	+	$6.308	=	$7.009
F 2017	**$0.705**	**+**	**$6.347**	**=**	**$7.052**
F 2018	**$0.728**	**+**	**$6.551**	**=**	**$7.279**
F 2019	**$0.743**	**+**	**$6.688**	**=**	**$7.431**

Data Sources

Tobacco trust balances and earnings are obtained from the BOI and SABHRS. Projections of tobacco settlement deposits are from the *Tobacco Settlement* revenue estimate. Projections of the STIP and TFIP interest rates are from *Interest Rates Introduction.*

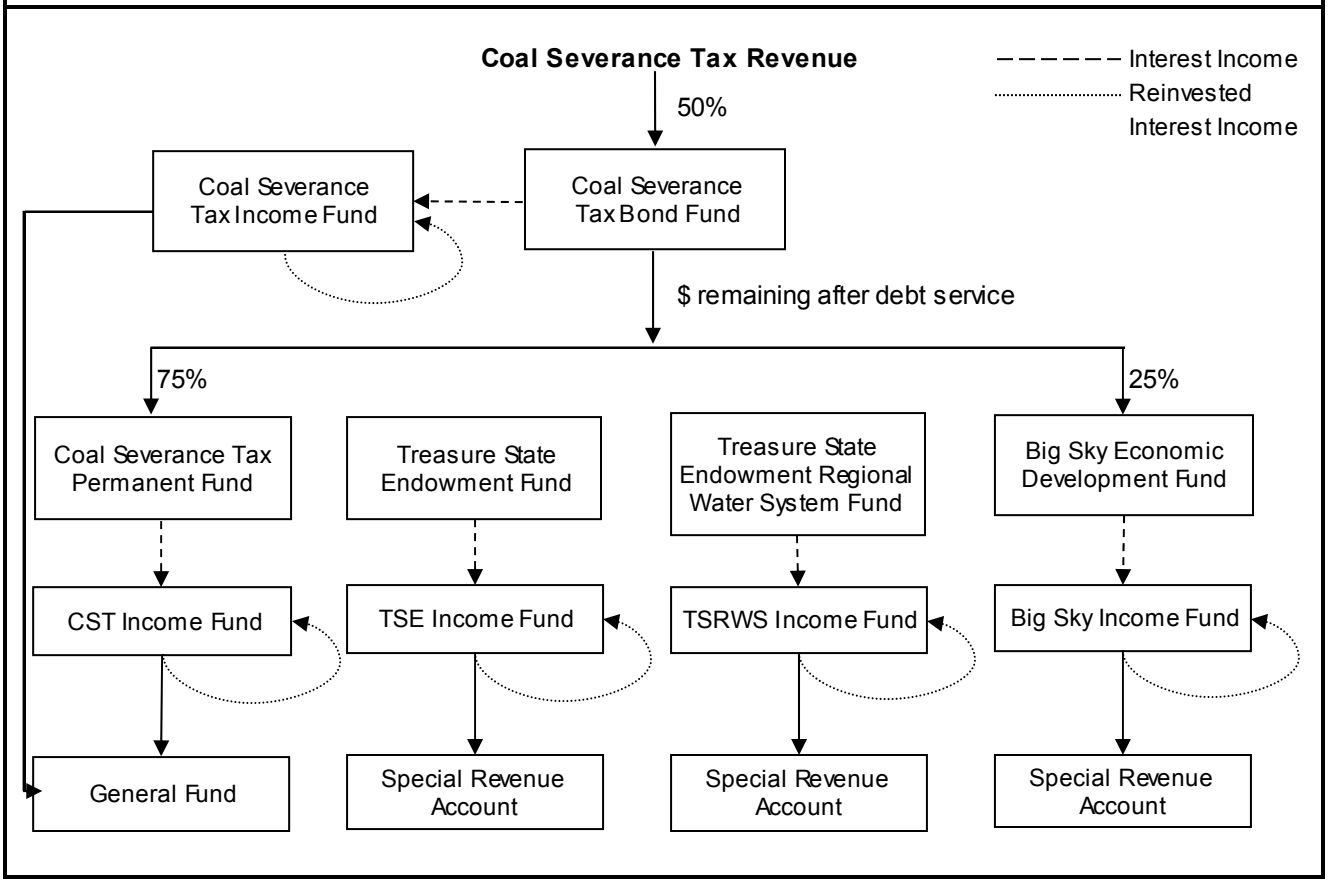
Revenue Description

Article IX, Section 5, of the Montana Constitution established a permanent trust fund into which at least half of coal severance tax revenue must be deposited as principal. Interest income from this principal may be appropriated, but the principal itself is inviolate unless approved by three-fourths of the members of each house in the legislature. Under current law, 50% of coal severance tax revenue is deposited in the trust fund, which is divided into the following funds. (17-5-703, MCA)

- Coal Severance Tax Bond Fund
- Coal Severance Tax Permanent Fund
- Treasure State Endowment Fund (TSE)
- Treasure State Endowment Regional Water System Fund (TSRWS)
- Big Sky Economic Development Fund (BSED)

The coal severance tax revenue allocated to the trust is initially deposited in the coal severance tax bond fund, which provides for debt service on the state's coal severance tax bonds. The revenue is then distributed to the various accounts as shown in Figure 1.

Figure 1: Distribution of Coal Severance Tax



Coal Severance Tax Bond Fund

The coal severance tax revenue deposited into the coal severance tax bond fund (bond fund) secures state issued bonds referred to as coal severance tax bonds. The tax bonds are issued to finance loans through the Department of Natural

Resources and Conservation (DNRC). The Department of Revenue (DOR) administers the bond fund, and at the beginning of the fiscal year, DNRC informs DOR of the amount necessary to meet all principal and interest payments on coal severance tax bonds in the next twelve months. This amount is maintained as a reserve balance in the bond fund.

A portion of the reserve balance in the bond fund is invested in the short-term investment pool (STIP). This investment averages about $6 million per year, and the interest earnings are deposited in the coal severance tax income fund. The coal severance tax income fund balance is transferred monthly to the general fund, but the balance is invested in STIP during the interim with the reinvested interest income returning to the fund.

The coal severance tax revenue that is not reserved in the bond fund is allocated 25% to the BSED fund and 75% to the coal severance tax permanent fund (permanent fund). Effective starting in FY 2017, the TSE fund and TSRWS fund no longer receive distributions from the bond fund; however, these two funds retain their existing balances and continue to generate interest earnings to fund infrastructure projects around the state.

Risks and Significant Factors

- Given the current economic outlook, it is increasingly likely that the Federal Reserve will raise the target level of the federal funds rate multiple times during the forecast period. An increase in the federal funds rate will lead to rising short-term interest rates, which will lift the interest earnings of STIP investments.
- Coal trust fund balances are primarily invested in the trust fund investment pool (TFIP), so rates of return on assets held in the TFIP are a large determinant of trust fund interest earnings.
- Market interest rates on the types of investment grade assets that make up the TFIP are at historically low levels. This will keep downward pressure on TFIP yields, which are expected to continue declining throughout the forecast period.
- For the trust funds that receive distributions from the coal severance tax (currently the BSED fund and the permanent fund), growth in their fund balances is linked directly to the amount of coal severance tax collected. All else equal, greater principle growth will lead to higher interest earnings. Shifts in coal markets that impact coal production and/or price in Montana will flow through to effect distributions to and interest earnings from the coal trust funds.

Forecast Methodology

Interest earnings from the TSE fund, TSRWS fund, and BSED fund are forecast in two main steps.

Step 1. Estimate the investment composition of the balance in each trust fund (i.e. the allocation between STIP and TFIP assets).

Step 2. Apply the appropriate interest rate to each investment balance. Details about the STIP and TFIP are discussed in the *Interest Rate Introduction* section.

The following sections discuss the revenue outlook for each individual trust.

<u>Coal Severance Tax Permanent Fund</u>

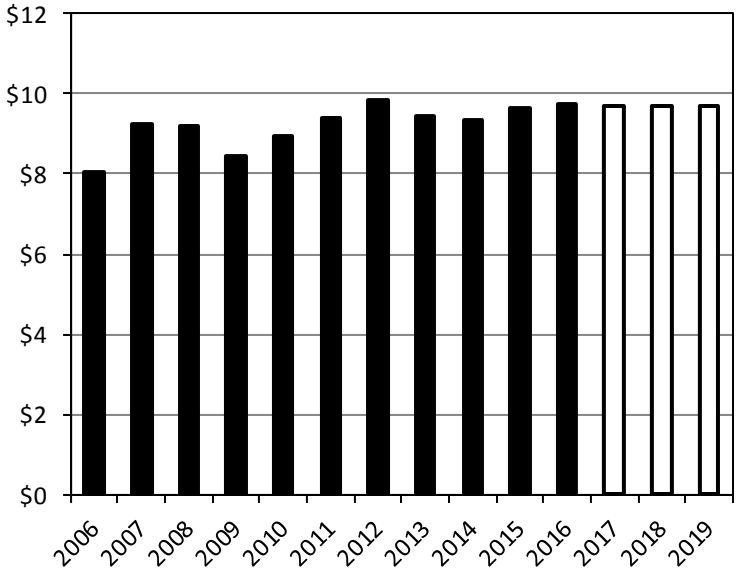
The coal severance tax permanent fund is the original coal tax trust fund. Generally, the permanent fund is not a recipient of coal severance tax revenue, but with the elimination of the bond fund distributions to the TSE fund and TSRWS fund at the beginning of FY 2017, the permanent fund now receives 75% of the coal severance tax revenue allocated to the trust funds. The average balance in the permanent fund for FY 2016 was $497 million, and the investment composition of the fund included 24% in loans, 3% in the STIP, and the remaining 73% in the TFIP. The interest earnings from the permanent fund are deposited into the coal severance tax income fund and are ultimately transferred to the general fund. Permanent fund interest earnings allocated to the general fund are discussed in the *Coal Trust Interest Earnings* section.

Treasure State Endowment Fund

The TSE fund is used for local government projects that include improvements to drinking water systems, wastewater treatment facilities, sewer systems, solid waste disposal systems, and bridges. The coal tax contributions to the TSE have varied across years. In FY 2002 and FY 2003, the trust fund received 75% of the distribution from the coal bond fund. Deposits to the trust fund declined in FY 2004 as the TSE fund's share of the bond fund allocation was reduced to 50% of distributable revenue (SB 10, 2003 session). From FY 2004 through FY 2016, the distribution from the coal bond fund to the TSE fund remained at 50%.

Table 1
Treasure State Endowment Fund Interest
($ millions)

Fiscal Year	Revenue	Percent Change
A 2006	$8.039	-5.22%
A 2007	$9.225	14.76%
A 2008	$9.194	-0.33%
A 2009	$8.450	-8.09%
A 2010	$8.940	5.79%
A 2011	$9.416	5.33%
A 2012	$9.866	4.78%
A 2013	$9.448	-4.24%
A 2014	$9.356	-0.98%
A 2015	$9.656	3.21%
A 2016	$9.767	1.15%
F 2017	**$9.692**	**-0.77%**
F 2018	**$9.699**	**0.07%**
F 2019	**$9.713**	**0.15%**



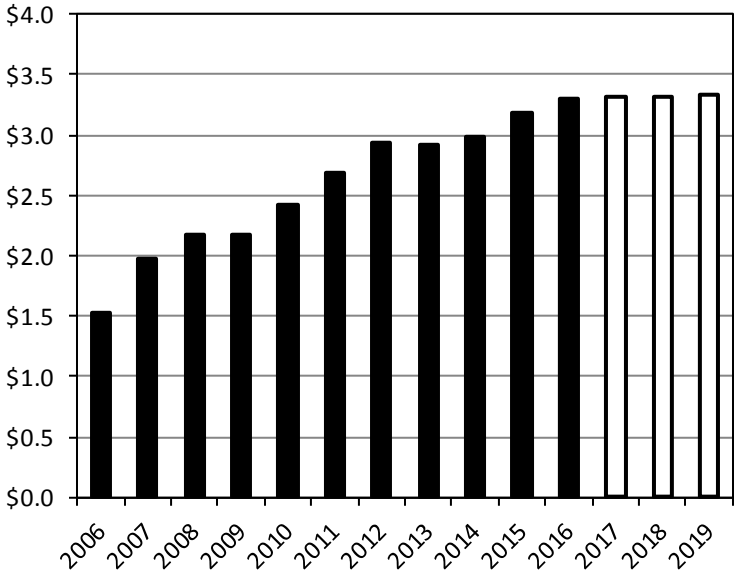
The total balance in the TSE fund at the end of FY 2016 was $266.5 million with 98.7% of the balance invested in the TFIP, 0.1% percent in loans, and 1.2% invested in STIP. The interest income from the TSE fund is deposited in the TSE income fund, which earns interest income from STIP investments which is then reinvested. The money needed for local government projects is transferred from the income fund to a state special revenue account for distribution. As mentioned above, the TSE fund stops receiving coal severance tax revenue starting in FY 2017.

Treasure State Endowment Regional Water System Fund

The Treasure State Endowment Regional Water System Fund (TSRWS) was established by the 1999 Legislature through SB 220. The TSRWS fund provides support for regional water projects. Allocations from the TSRWS fund may be used to match funds for construction of water systems, pay debt service on water system bond obligations, pay administrative expenses of state and local entities, and provide interim funding to state or local entities pending receipt of grants or loans. Historically, the TSRWS fund received 25% of the distributable revenue from the coal bond fund. Beginning in FY 2017 the fund no longer receives revenue from the bond fund, but the principle remains in place and continues to earn interest.

Table 1
Treasure State Endowment Regional Water System Fund Interest
($ millions)

	Fiscal Year	Revenue	Percent Change
A	2006	$1.527	9.4%
A	2007	$1.979	29.6%
A	2008	$2.175	9.9%
A	2009	$2.179	0.2%
A	2010	$2.419	11.0%
A	2011	$2.685	11.0%
A	2012	$2.937	9.4%
A	2013	$2.912	-0.9%
A	2014	$2.994	2.8%
A	2015	$3.178	6.2%
A	2016	$3.307	4.0%
F	**2017**	**$3.312**	**0.2%**
F	**2018**	**$3.320**	**0.3%**
F	**2019**	**$3.335**	**0.5%**



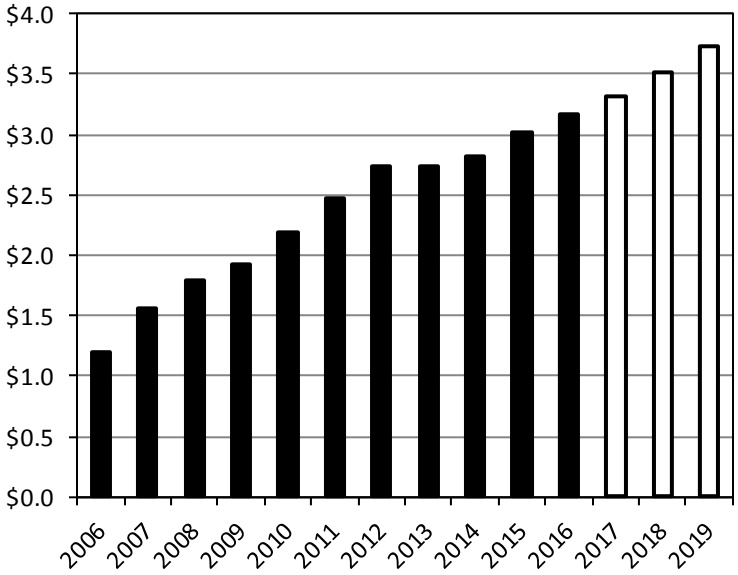
The TSRWS fund balance at the end of FY 2016 was $92.4 million. The balance is invested 98% in the TFIP and 2% in STIP. The interest income from the TSRWS fund is deposited in the TSRWS income fund, the balance of which is invested in STIP. Interest earnings from STIP investments in the income fund are reinvested. Funds needed for projects are transferred to a state special revenue account for distribution. Like the TSE fund, the TSRWS fund stops receiving its coal severance tax distribution beginning in FY 2017.

Big Sky Economic Development Fund

The Big Sky Economic Development Fund (BSED) was created by HB 249 during the 2005 Legislature. At the beginning of FY 2006, $20 million was taken from the permanent fund to create the BSED fund. The interest income from the BSED fund provides financial assistance to local governments and certified regional development corporations for the purposes of economic development. The BSED fund currently receives a 25% distribution from the coal bond fund and is slated to maintain this allocation through FY 2025.

Table 1
Big Sky Economic Development Fund Interest
($ millions)

Fiscal Year	Revenue	Percent Change
A 2006	$1.194	-
A 2007	$1.559	30.62%
A 2008	$1.801	15.53%
A 2009	$1.925	6.88%
A 2010	$2.196	14.06%
A 2011	$2.472	12.57%
A 2012	$2.731	10.48%
A 2013	$2.745	0.51%
A 2014	$2.822	2.79%
A 2015	$3.022	7.09%
A 2016	$3.171	4.96%
F 2017	**$3.324**	**4.82%**
F 2018	**$3.520**	**5.90%**
F 2019	**$3.725**	**5.80%**



The year-end balance for the BSED fund in FY 2016 was $88.6 million. This balance is invested 98% in the TFIP and 2% in STIP. Income from the fund's investments is transferred to a state special revenue account to fund program expenditures. Income not needed for program expenditures remains in the BSED fund and earns interest. Current law dictates that the BSED fund will continue to receive coal severance tax revenue through FY 2025.

Data Sources

Trust fund balances and earnings were obtained from the Board of Investments and SABHRS. Establishment and legal description of the coal trusts is discussed in 17-5-701 through 17-5-731, MCA.

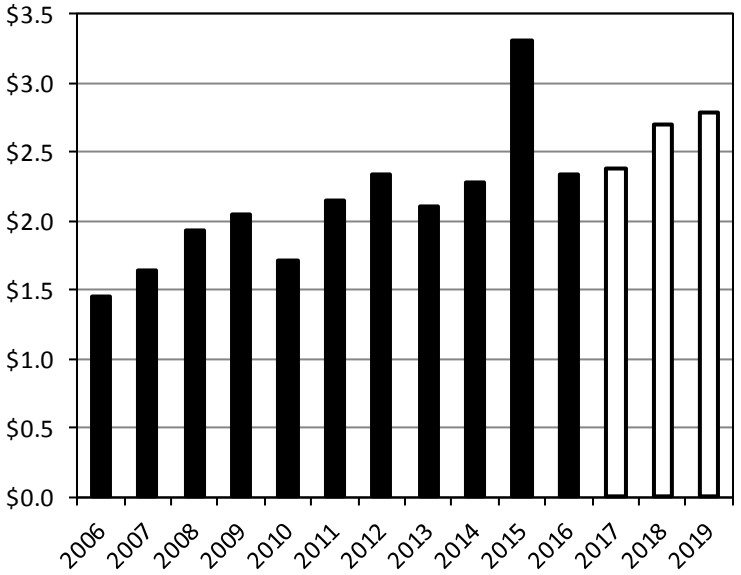
Revenue Description

Title 15, Chapter 38, MCA, created a resource indemnity and groundwater assessment tax. The resource indemnity tax (RIT) was initially enacted to provide for the creation of a resource indemnity trust fund, where 50% of the proceeds from the tax went toward building up the principle of the trust fund until it reached the cap of $100 million. The trust fund balance eclipsed $100 million in December 2001, and consequently the RIT distribution ceased. Currently, the tax provides revenue for groundwater assessment and resource development programs for the benefit of the state and its citizens. The purpose of the RIT is to indemnify the citizens of Montana for depletion of the state's natural resources and for environmental damage caused by mineral development.

Table 1 shows actual RIT revenues for FY 2006 through FY 2016 and forecast revenue for FY 2017 though FY 2019.

Table 1
Resource Indemnity Tax
($ millions)

Fiscal Year	Revenue	Percent Change
A 2006	$1.456	1.4%
A 2007	$1.647	13.1%
A 2008	$1.926	16.9%
A 2009	$2.054	6.6%
A 2010	$1.712	-16.7%
A 2011	$2.147	25.4%
A 2012	$2.344	9.2%
A 2013	$2.112	-9.9%
A 2014	$2.279	7.9%
A 2015	$3.303	44.9%
A 2016	$2.335	-29.3%
F 2017	**$2.380**	**1.9%**
F 2018	**$2.704**	**13.7%**
F 2019	**$2.785**	**3.0%**



The tax rates for RIT vary depending on the type of mineral being extracted.

- Talc's tax rate is $25 plus an additional 4% of the gross value of the talc produced in excess of $625 in the prior calendar year.
- Coal's tax rate is $25 plus an additional 0.4% of the gross value of the coal produced in excess of $6,250 in the prior calendar year.
- Vermiculite's tax rate is $25 plus an additional 2% of the gross value of the vermiculite produced in excess of $1,250 in the prior calendar year.
- Limestone's tax rate is $25 plus an additional 10% of the gross value of the limestone produced in excess of $250 in the prior calendar year.
- Industrial garnets and its associated byproducts tax rate is $25 plus an additional 1% of the gross value of product in excess of $2,500 in the prior calendar year.
- All other mineral's tax rate (excluding metals, oil, and natural gas) is $25 and an additional 0.5% of the gross value of the product in excess of $5,000 in the prior calendar year.

Forecast Methodology

Step 1. Estimate the amount of RIT revenue from coal mines that pay state coal severance tax. Over the past seven years, RIT revenue from these mines has averaged just under 13% of general fund coal severance tax revenue. This percentage is expected to remain the same over the forecast period.

Step 2. Estimate the amount of RIT revenue from all other mines in the state. A five-year moving average is used to forecast RIT revenue from other mines.

Table 2 shows the actual and forecast RIT revenues from coal production and other mineral production.

Table 2
Resource Indemnity Tax
($ millions)

Fiscal Year	Coal Tax Revenue		Other Minerals Tax Revenue		Total
A 2006	$1.087	+	$0.370	=	$1.456
A 2007	$1.212	+	$0.435	=	$1.647
A 2008	$1.215	+	$0.711	=	$1.926
A 2009	$1.262	+	$0.792	=	$2.054
A 2010	$1.362	+	$0.350	=	$1.712
A 2011	$1.598	+	$0.549	=	$2.147
A 2012	$1.728	+	$0.616	=	$2.344
A 2013	$1.745	+	$0.367	=	$2.112
A 2014	$1.799	+	$0.480	=	$2.279
A 2015	$1.947	+	$1.356	=	$3.303
A 2016	$1.632	+	$0.703	=	$2.335
F 2017	**$1.675**	**+**	**$0.704**	**=**	**$2.380**
F 2018	**$1.982**	**+**	**$0.722**	**=**	**$2.704**
F 2019	**$1.992**	**+**	**$0.793**	**=**	**$2.785**

Distribution

RIT revenue is allocated to several state special revenue accounts. These include the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) match debt service fund (75-10-622, MCA), the ground water assessment account (85-2-905, MCA), the water storage account (85-1-631, MCA), the Hazardous Waste/CERCLA state special revenue account (75-10-621, MCA), the Environmental Quality Protection Fund (75-10-704, MCA), and the Natural Resource Projects state special revenue account (15-38-302, MCA). The allocations are made in the specific order described below.

First, the CERCLA match debt service fund must allocate the required amount to pay the principal, redemption premiums, and interest on CERCLA bonds, after transfers from the CERCLA cost recovery account (75-10-631, MCA).

Second, $0.366 million is distributed to the groundwater assessment account.

Third, at the beginning of the biennium (even numbered years), $0.150 million is allocated to the water storage state special revenue account.

Lastly, 25% of the remaining revenue is distributed to the Hazardous Waste /CERCLA state special revenue account, 25% is distributed to the Environmental Quality Protection Fund, and 50% to the Natural Resource Projects state special revenue account.

Table 3 shows the actual and forecast distribution of RIT revenue for FY 2014 through FY 2019.

Table 3
Resource Indemnity Tax Revenue Allocation
($ millions)

Fiscal Year	CERCLA Match Debt Service Fund	Groundwater Assessment	Water Storage	Environmental Quality Protection	Hazardous Waste / CERCLA	Natural Resources Projects T	otal
A 2014	$0.272	$0.366	$0.150	$0.373	$0.373	$0.745	$2.279
A 2015	$0.268	$0.366	$0.000	$0.667	$0.667	$1.334	$3.303
A 2016	$0.270	$0.366	$0.150	$0.387	$0.387	$0.774	$2.335
F 2017	**$0.270**	**$0.366**	**$0.000**	**$0.436**	**$0.436**	**$0.872**	**$2.380**
F 2018	**$0.270**	**$0.366**	**$0.150**	**$0.480**	**$0.480**	**$0.959**	**$2.704**
F 2019	**$0.270**	**$0.366**	**$0.000**	**$0.537**	**$0.537**	**$1.075**	**$2.785**

Data Sources

RIT revenue and distribution amounts were obtained from the Department of Revenue and SABHRS.

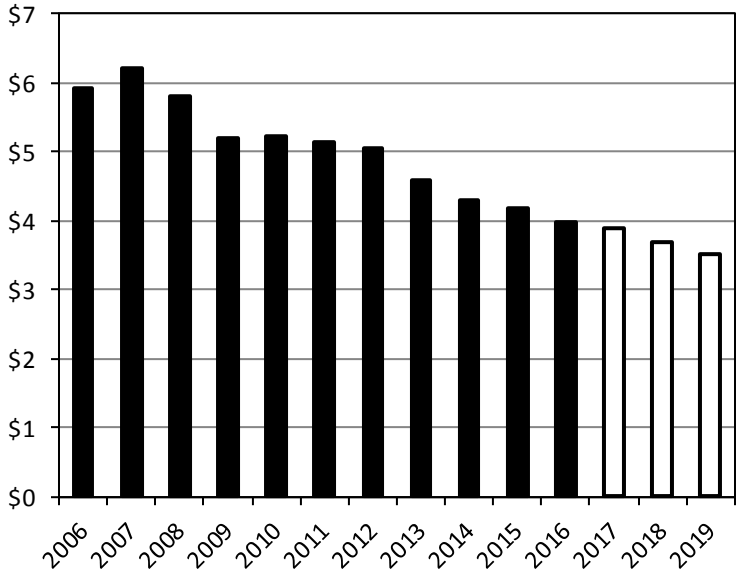
Revenue Description

Title 15, Chapter 38, MCA, created a Resource Indemnity Trust (RIT) fund to indemnify the citizens of Montana for depletion of the state's natural resources and for the environmental damage due to mineral development. The trust was funded with proceeds from the Resource Indemnity Tax until the trust balance reached $100 million, which occurred in December 2001. Deposits from the Resource Indemnity Tax ceased at that point and the balance has remained steady at slightly over $100 million.

Table 1 shows actual interest income from the RIT trust fund from FY 2006 through FY 2016 and forecast income for FY 2017 through FY 2019.

Table 1
Resource Indemnity Trust Interest
($ millions)

	Fiscal Year	Revenue	Percent Change
A	2006	$5.916	-14.3%
A	2007	$6.220	5.2%
A	2008	$5.801	-6.7%
A	2009	$5.197	-10.4%
A	2010	$5.213	0.3%
A	2011	$5.135	-1.5%
A	2012	$5.064	-1.4%
A	2013	$4.602	-9.1%
A	2014	$4.296	-6.6%
A	2015	$4.176	-2.8%
A	2016	$3.973	-4.9%
F	**2017**	**$3.892**	**-2.0%**
F	**2018**	**$3.698**	**-5.0%**
F	**2019**	**$3.503**	**-5.3%**



Interest earnings from the RIT fund have been declining steadily since FY 2007. Since the principle of the RIT fund is fixed, interest earnings from the fund are determined solely by changes in yield of the fund's assets. The fund is invested primarily in the trust fund investment pool (TFIP) which consists of long-term securities and is managed by the Montana Board of Investments (BOI). The financial turmoil caused by the Great Recession sent interest rates plummeting and they have yet to recover to pre-crisis levels. As a result, TFIP yields have been declining steadily as relatively low-yield assets make up a growing share of the investment pool. With a fixed principle and declining yields on its TFIP assets, the RIT fund is projected to continue to experience deteriorating investment earnings.

Forecast Methodology

Step 1. Estimate the balances of short- and long-term investments in the RIT fund.

Step 2. Estimate the yields on RIT fund investments and apply these rates to the estimated RIT fund balances.

Distribution

The distribution of RIT interest earnings is defined in section 15-38-202, MCA. Some of the funds receive a fixed allocation per biennium, some funds receive a fixed allocation per fiscal year, and some funds receive a percentage each fiscal year

of remaining revenue after the fixed allocations have been made. If there isn't enough interest revenue to cover the fixed allocations for all the funds, then each fund gets a percentage of the available revenue. This percentage is equal to the proportion a fund's fixed allocation is to the total revenue needed to cover the fixed allocations for all funds.

In the first year of each biennium the following funds receive these fixed allocations:

- $650,000 to the oil and gas production damage mitigation account unless the unobligated cash balance equals or exceeds $1 million (82-11-161, MCA).
- $500,000 to the water storage account (85-1-631, MCA).
- $175,000 to the environmental contingency account unless the unobligated cash balance equals or exceeds $750,000 (75-1-1101, MCA).

Each fiscal year the following accounts receive these fixed allocations:

- $3.2 million to the natural resource projects account for grants (15-38-302, MCA).
- $300,000 to the groundwater assessment account (85-2-905, MCA).
- $500,000 to the Department of Fish, Wildlife, and Parks for the trout habitat enhancement program (87-1-283, MCA).

Each fiscal year any money remaining after all fixed allocations have been made is distributed to the following accounts in these proportions:

- 65% to the natural resource operations account (15-38-301, MCA).
- 26% to the hazardous waste/CERCLA account (75-10-621, MCA).
- 9% to the environmental quality protection fund (75-10-704, MCA).

Table 2 shows the distribution of RIT interest for FY 2016 and the forecast distribution for FY 2017 through FY 2019.

Table 2
Resource Indemnity Trust Interest Allocation
($ millions)

Entity	FY 2016	FY 2017	FY 2018	FY 2019
Total Revenue	**$3.973**	**$3.892**	**$3.698**	**$3.503**
Biennial Fixed Allocations				
Oil & Gas Damage Mitigation	$0.493	**$0.000**	**$0.451**	**$0.000**
Environmental Contingency	$0.085	**$0.000**	**$0.122**	**$0.000**
Water Storage	$0.380	**$0.000**	**$0.347**	**$0.000**
Annual Fixed Allocation				
Natural Resources Projects	$2.416	**$3.114**	**$2.222**	**$2.802**
Ground Water Assessment	$0.226	**$0.292**	**$0.208**	**$0.263**
Future Fisheries	$0.377	**$0.487**	**$0.347**	**$0.438**
Remainder	**$0.000**	**$0.000**	**$0.000**	**$0.000**
Annual Percentage Allocations				
Natural Resource Operations (65%)	$0.000	**$0.000**	**$0.000**	**$0.00**
Hazardous Wast/CERCLA (26%)	$0.000	**$0.000**	**$0.000**	**$0.00**
Environmental Quality Protection (9%)	$0.000	**$0.000**	**$0.000**	**$0.00**

Data Sources

Investment balances and interest rate data were obtained from the Board of Investments and SABHRS.

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

SUMMARY OF MAJOR ASSUMPTIONS SECTION 11

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GOVERNOR'S OFFICE OF
BUDGET AND PROGRAM PLANNING

2019 Biennium Executive Budget Revenue Assumptions

General Fund Assumption Item	Actual 2016	Forecast 2017	2018	2019
	(Fiscal year unless otherwise stated)			
Personal Income Tax	TY 2016	TY 2017	TY 2018	TY 2019
Full Year Resident Returns (Annual)	559,048	562,558	566,878	571,392
Full Year Resident Returns (Growth)	0.3%	0.6%	0.8%	0.8%
Income Items	TY 2016	TY 2017	TY 2018	TY 2019
Wages, salaries, tips, etc.	3.9%	5.0%	4.9%	4.6%
Interest income	2.2%	29.5%	27.6%	13.8%
Dividend income	1.7%	3.9%	3.1%	2.8%
Net business income	3.1%	3.2%	4.0%	3.2%
Capital gain or (loss)	13.1%	-0.1%	2.3%	5.2%
Supplemental gains or (losses)	1.1%	2.6%	2.1%	1.9%
Rents, royalties, partnerships, etc.	0.0%	6.1%	6.5%	11.0%
Taxable IRAs and pensions	6.5%	6.8%	5.4%	4.6%
Taxable portion of Soc. Sec.	8.5%	7.1%	6.1%	5.2%
Net farm income	-0.8%	-0.7%	-0.7%	-0.7%
All Other income	0.7%	1.0%	-0.1%	-0.6%
Fed. Adj. to Income:	4.3%	4.7%	4.2%	7.0%
Montana Additions	TY 2016	TY 2017	TY 2018	TY 2019
Interest on state, county, bonds	3.7%	3.9%	4.1%	4.0%
Federal income tax refunds	3.5%	1.2%	1.6%	1.1%
All Other additions	-1.2%	-0.1%	0.5%	0.0%
Montana Subtractions	TY 2016	TY 2017	TY 2018	TY 2019
Farm risk management account	0.0%	0.0%	0.0%	0.0%
Exclusion for savings bonds	4.4%	56.9%	43.9%	19.4%
Unemployment income	-6.0%	-2.4%	3.3%	6.6%
Medical savings account excl.	5.1%	4.8%	4.6%	4.4%
Family education account excl.	3.6%	3.4%	3.3%	3.2%
First-time homebuyers acct. excl.	1.5%	1.5%	1.5%	1.5%
Health Care Prof. Loan Pmt. excl.	5.8%	2.7%	1.3%	0.7%
All Other Subtractions	5.9%	5.9%	5.9%	5.9%
Itemized Deductions	TY 2016	TY 2017	TY 2018	TY 2019
Medical insurance premiums	4.8%	4.8%	4.8%	4.8%
Medical deduction	0.7%	0.8%	0.8%	0.9%
Long-term care insurance	3.1%	3.0%	2.9%	2.8%
Balance of federal tax	9.3%	9.3%	9.3%	9.3%
Additional federal back year tax	0.0%	0.0%	0.0%	0.0%
Property taxes	2.8%	3.5%	3.3%	3.4%
Other Deductible taxes	-1.3%	-1.3%	-1.3%	-1.3%
Home mortgage interest	4.7%	4.7%	4.7%	4.7%
Deductible investment interest	6.5%	6.0%	3.1%	1.1%
Contributions	5.5%	5.5%	5.5%	5.5%
Child/dependent care expenses	-3.5%	13.1%	-0.1%	2.3%
Casualty and theft losses	0.0%	0.0%	0.0%	0.0%
Tier I - Miscellaneous	3.9%	3.9%	3.9%	3.9%
Tier II - Miscellaneous	0.0%	0.0%	0.0%	0.0%
Gambling Losses	12.3%	12.3%	12.3%	12.3%
Credits	TY 2016	TY 2017	TY 2018	TY 2019
Total Allowable Credits	4.0%	4.0%	4.0%	4.0%

Other				
Est. FY Liability ($ million)	1,060.5	1,101.6	1,174.2	1,261.1
Audit Collections($ million)	35.1	32.8	35.7	39.2
Penalties and Interest ($ million)	11.6	10.6	11.3	12.7
Prior Year Amended Returns ($ million)	5.0	4.7	5.0	5.5
Calculated Collections ($ million)	1,112.2	1,149.8	1,226.2	1,318.5
SABHRS/ Base Adj ($ million)	72.6	70.0	65.0	60.0
SABHRS/ Adjusted Collections ($ million)	1,184.828	1,219.776	1,291.208	1,378.482
Property Tax				
Mill Levy Revenue (millions $)				
Property Tax - 95 Mill Levy	$243.587	$250.705	$271.164	$276.557
Property Tax - 1.5 Mill Levy	$1.199	$1.296	$1.337	$1.445
Protested Property Taxes	($2.481)	($0.550)	($0.550)	($0.550)
Total Mill Levy Revenue (millions $)	$242.306	$251.451	$271.951	$277.451
Non-Levy PT Revenue (millions $)				
Coal Gross Proceeds	$7.580	$7.990	$6.959	$7.928
Federal Forest Reserves	$2.780	$0.419	$0.419	$0.419
All Other (by residual)	$0.290	$0.290	$0.290	$0.290
Total Non-Levy PT Revenue	$10.651	$8.699	$7.669	$8.637
Statewide TV by Class (millions) - Fiscal Year				
1. Net Proceeds	3.907	4.080	3.943	4.106
2. Gross Proceeds (w/o Abatements)	26.517	19.454	17.716	19.684
3. Agricultural Land	141.391	142.282	152.486	152.257
4. Res./Comm... Real Property	1,539.430	1,552.031	1,713.165	1,722.334
5. Rural Co-Op/Poll. Control	46.523	49.104	49.712	50.333
7. Non-centrally Assessed Util.	1.189	1.182	1.130	1.121
8. Business Equipment (FY adjusted)	150.392	154.834	162.245	170.019
9. Pipelines, Electrical Transmission	430.457	478.417	507.627	538.621
10. Forest Land	4.922	4.920	4.895	4.870
12. Airlines/Railroads	74.354	85.934	90.173	94.621
13. Telecomm./Elec Generation	178.468	181.831	186.558	191.409
14. Renewable Energy Prod.& Trans.	16.881	17.649	18.527	19.317
15. CO2/Qualifying Liquid Pipelines	2.485	2.572	2.572	2.572
16. High Voltage DC Converter	-	-	-	-
Statewide Taxable Value (millions)	3.907	4.080	3.943	4.106
Statewide TV Growth by Class - Fiscal Year				
1. Net Proceeds	3.1%	4.4%	-3.4%	4.1%
2. Gross Proceeds (w/o Abatements)	3.7%	-26.6%	-8.9%	11.1%
3. Agricultural Land	-7.1%	0.6%	7.2%	-0.1%
4. Res./Comm... Real Property	1.3%	0.8%	10.4%	0.5%
5. Rural Co-Op/Poll. Control	4.4%	5.5%	1.2%	1.2%
7. Non-centrally Assessed Util.	0.6%	-4.2%	-0.8%	-0.8%
8. Business Equipment (FY adjusted)	-0.2%	3.0%	4.8%	4.8%
9. Pipelines, Electrical Transmission	14.9%	11.1%	6.1%	6.1%
10. Forest Land	-20.8%	0.0%	-0.5%	-0.5%
12. Airlines/Railroads	3.2%	15.6%	4.9%	4.9%
13. Telecomm./Elec Generation	5.1%	1.9%	2.6%	2.6%
14. Renewable Energy Prod.& Trans.	1.9%	4.6%	5.0%	4.3%
15. CO2/Qualifying Liquid Pipelines	-29.3%	3.5%	0.0%	0.0%
16. High Voltage DC Converter	0.0%	0.0%	0.0%	0.0%
Statewide Taxable Value (millions)	**3.0%**	**3.0%**	**8.0%**	**2.1%**

Taxable Value in TIF districts (millions)	(52.837)	(55.244)	(56.392)	(60.141)
Taxable value for COT Counties	892.940	919.791	993.703	1,014.362
TIF Taxable Value in COY Counties	(29.201)	(28.312)	(30.587)	(31.223)
Taxable Value for 1.5 Mills	863.739	891.479	963.116	983.139
1.5 mill Revenue ($ million)	$1.296	$1.337	$1.445	$1.475
Vehicle Taxes and Fees				
First-year registrations	67,037	67,775	67,306	66,429
Annual vehicle registrations by age class				
0 to 4 Years	224,217	234,787	248,801	266,681
5 to 10 Years	253,540	245,637	240,706	237,880
Over 10 Years	352,492	358,165	362,828	366,455
All	830,249	838,589	852,335	871,016
Registrations of Vehicles over 10 years of age				
Permanent Registrations	55,597	56,627	57,676	58,744
Annual Registrations Vehicles over 10 years old	352,492	358,165	362,828	366,455
Cumulative Permanent Registrations	334,686	375,634	415,712	454,981
Annual Light Vehicle Revenue (million $)	$80.58	$82.35	$85.10	$88.83
Other Vehicle Registration revenue (million $)	$14.32	$14.50	$14.98	$15.64
All Other Fees (million $)	$7.30	$7.39	$7.63	$7.97
Permanent Registration Revenue (million $)	$4.86	$5.00	$5.00	$5.10
Corporate Income Tax				
FY Lagged (1) U.S. Corp Profits Bn $	1,845.0	1,712.4	1,819.8	1,864.7
FY Lagged (2) U.S. Corp Profits Bn $	1,800.8	1,845.0	1,712.4	1,819.8
FY Bonus Depreciation	50%	50%	45%	35%
FY WTI Oil Price	44.85	46.86	51.80	57.36
Insurance Premiums Tax				
Estimated Gross Insurance Premium Tax (millions)	$103.164	$105.554	$108.211	$110.867
Prior Calendar Year S&P 500 Index Average	2,061	2,097	2,167	2,214
Video Gambling				
Net machine Income (million $)	$403.69	$416.81	$430.31	$444.69
Oil and Natural Gas				
WTI Oil Price per Barrel	$41.74	$47.43	$52.12	$60.47
MT Oil Price per Barrel	$34.33	$40.67	$48.98	$56.68
Oil Production (millions bbl)	25.81	21.74	19.96	19.36
Oil Effective Tax Rate	9.17%	9.40%	9.44%	9.44%
Henry Hub Natural Gas Price per MCF	$2.24	$2.93	$3.05	$2.95
MT Natural Gas price per MCF	$1.46	$2.29	$2.48	$2.41
Natural Gas Production (thousands of MCF)	39.36	36.74	36.22	36.13
Natural Gas Effective Tax Rate	9.66%	9.69%	9.71%	9.71%
US Mineral Royalties				
Coal Royalty Income	$334.732	$337.544	$351.892	$355.613
Oil Royalty Income	$91.176	$88.050	$96.124	$104.847
Natural Gas Royalty Income	$14.808	$20.374	$22.104	$20.990
Other US Mineral Royalty Income (Rentals & Bonuses)	$2.221	$2.097	$2.008	$1.932
Coal Severance Tax				
Tons Produced	30.92	31.24	32.77	33.01
Price Per Ton	$17.27	$17.96	$18.05	$18.07
Exemptions	127.56	140.25	147.89	149.11
Tax Rate	12.16%	12.74%	12.82%	12.77%

Metal Mines Tax				
Gross Value	$622.273	$609.208	$770.563	$636.661
Deductions	$81.503	$79.792	$80.460	$83.388
Average Tax Rate	1.66%	1.66%	1.66%	1.66%
Total Tax Revenue	8.975	8.786	8.850	9.179
Purchasing Price Index (PPI) metals Pct. Change	-6.14%	-2.04%	0.00%	-2.04%
World Bank FY Change in Gold Price	base	-1.25%	-1.53%	-1.51%
World Bank FY Change in Platinum Price Change	base	-2.70%	5.18%	5.22%
World Bank FY Change in Copper Price	base	-1.41%	-5.54%	2.88%
Electrical Energy Producers Tax				
kWh (millions)	22,200	23,145	23,692	23,313
Wholesale Energy Tax				
Taxable kWh (million)	22,875	23,014	22,380	22,120
Coal Trust Interest Earnings				
Balance	$497.5	$507.8	$527.2	$547.1
Return	3.75%	3.85%	3.82%	3.78%
TCA Interest Earnings				
Balance $	807.2	$726.9	$807.1	$944.8
Return	0.47%	0.80%	1.31%	1.94%
Liquor Excise and License Tax				
FY Pre-Tax Sales (millions)	$107.043	$109.768	$115.525	$121.008
FY Tribal Distributions (millions)	$0.517	$0.538	$0.566	$0.592
Liquor Profits				
FY Gross Liquor Sales (millions)	$134.650	$138.020	$145.260	$152.123
FY Cost of Goods Sold (millions)	$76.821	$78.368	$82.479	$86.376
FY Liquor Discounts and Commissions (millions)	$18.720	$16.700	$17.576	$18.407
FY Liquor Operating Costs (millions)	$3.111	$3.187	$3.265	$3.345
Telecommunications Excise Tax				
ExciseTax	$16.766	$16.155	$15.566	$14.999
Audits, Penalties & Interest	$0.009	$0.010	$0.010	$0.010
Growth rate	-8.2%	-3.6%	-3.6%	-3.6%
Health Care Facility Utilization Fees				
FY Bed Days (millions)	1.553	1.542	1.531	1.520
FY Intermediate Care Expenditures (millions)	$16.354	$12.162	$0.000	$0.000
Beer Tax				
FY Beer Barrels (millions)	1.008	1.018	1.027	1.036
FY Tribal Distribution (millions)	$0.080	$0.080	$0.080	$0.080
FY Effective Tax Per Barrel ($)	$4.015	$3.980	$3.944	$3.909
Wine Tax				
FY Wine Liters (millions)	12.892	13.267	13.639	14.009
FY Tribal Distribution (millions)	0.061	0.062	0.064	0.066
Cigarette Tax				
FY Cigarette Packs (millions)	43.684	43.417	43.120	42.791
FY Effective Tax Rate per Pack (dollars)	$1.70	$1.70	$1.70	$1.70
FY Tribal Distribution (millions)	$4.040	$4.014	$3.986	$3.956

Tobacco Tax				
FY Value of Other Tobacco Products (millions)	$6.256	$6.153	$6.046	$5.937
FY Snuff Ounces (millions)	12.267	12.665	13.066	13.469
FY Tribal Distribution (millions)	$0.764	$0.781	$0.977	$0.995
Tobacco Settlement				
FY CPI Change (Percent Change)	3.00%	3.00%	3.00%	3.00%
FY Cumulative CPI Change (Percent Change)	68.74%	73.80%	79.02%	84.39%
Montana NPM Adjustment (millions)	-$1.807	-$1.807	-$1.365	-$1.300
Institutional Reimbursements				
Reimbursements - MDC (millions)	$6.364	$2.077	$0.000	$0.000
Reimbursements - MSH (millions)	$8.463	$9.866	$9.617	$9.707
Reimbursements - MMHNCC (millions)	$4.004	$4.150	$4.044	$4.057
Highway Patrol Fines				
Prior CY 2nd Quarter Gasoline Price (cents per gal)	342.49	251.00	220.24	233.20
Investment License Permits				
Prior FY S&P 500 average	2,061	2,095	2,273	2,368
Drivers License Fees				
Age Adj. Average Fee	$31.61	$31.94	$31.70	$31.75
Basic Drivers licenses issued	135,801	141,633	137,388	144,312
Revenue by type (million $)				
Basic Driver's Licenses	$4.157	$4.497	$4.148	$4.948
Commercial Licenses	$0.841	$0.699	$0.425	$0.557
Motorcycle Endorsements	$0.050	$0.052	$0.040	$0.055
Replacement Licenses	$0.328	$0.331	$0.341	$0.331
Renewal Fee	$0.068	$0.071	$0.071	$0.078
License Revenue	$5.444	$5.650	$5.017	$5.998
Estimate of County retention	$0.018	$0.018	$0.009	$0.000
Rail Car Tax				
Total Montana Allocated (market) Value (million $)	$221.097	$209.404	$211.382	$213.360
Class 12 Tax Rate	2.97%	3.04%	3.00%	2.96%
Taxable Value (million $)	$6.567	$6.366	$6.341	$6.315
Commercial & Industrial Mill Levy	544.85	538.09	543.40	550.30
Penalty and Interest ($ million)	$0.012	$0.012	$0.012	$0.012
Non-General Fund Assumption Item				
Property Tax				
University 6 Mill Levy TV (millions)	2,616.915	2,694.247	2,910.750	2,971.264
University 6 Mil levy revenue (million $)	$15.70	$16.17	$17.46	$17.83
University 6 mill non-levy revenue				
Coal Gross Proceeds (estimated)	$1.011	$1.069	$0.928	$1.057
Other Non-Levy Revenue	$0.017	$0.017	$0.017	$0.017
Protested University Mills	($0.154)	($0.034)	($0.034)	($0.034)
Total Non-Levy (million $)	$0.873	$1.051	$0.911	$1.040
Total PT 6 mill (million $)	$16.57	$17.22	$18.38	$18.87
Oil & Gas University Revenue (million $)	$1.151	$1.317	$1.455	$1.612
Bentonite University Revenue ($)	16,799	18,229	18,229	18,229

GOVERNOR
STEVE BULLOCK

STATE OF MONTANA

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GOVERNOR'S OFFICE OF
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