Revenue Forecast

JCA Presentation
February 14, 2022

SOUTH DAKOTA
LEGISLATURE
LEGISLATIVE RESEARCH COUNCIL

Economic Conditions

SUPPLY CHAIN DISRUPTIONS

- A massive inflow of supplies and a labor shortage is causing a bottleneck at the ports.

- A shortage of truck drivers and high demand is causing delays for deliveries to businesses.

- These issues and concerns will not be solved overnight and will take a considerable amount of time to work through.

- It is unlikely supply chain disruptions will ease in 2022
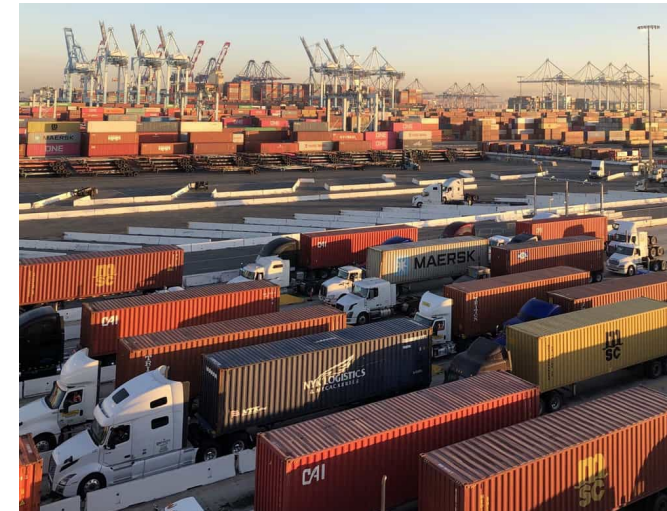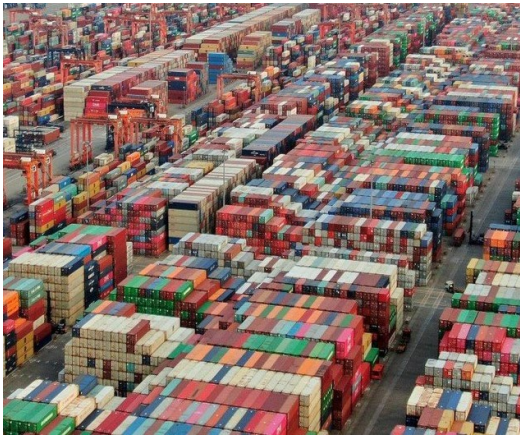
Supply Glut → Bottleneck at the Port → Driver Shortage → Low Inventory

Economic Conditions

SUPPLY SHORTAGE

- Inventories to sales ratios show the relationship of the end-of-month values of inventory to the monthly sales. A ratio of 1.0 would indicate there is enough inventory on hand to cover one months of sales.

- Inflation will continue to remain elevated, if there is strong demand for products and inventories remain low.

- Until these ratios return to pre-pandemic levels, I would expect inflation to remain evaluated.

Source: U.S. Census Bureau

Source: U.S. Bureau of Economic Analysis

Source: U.S. Census Bureau
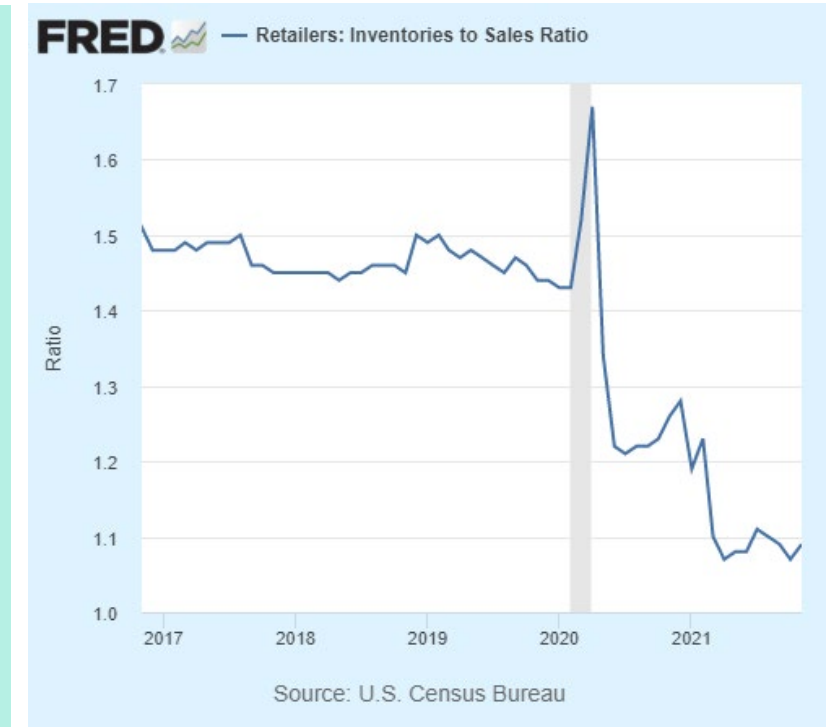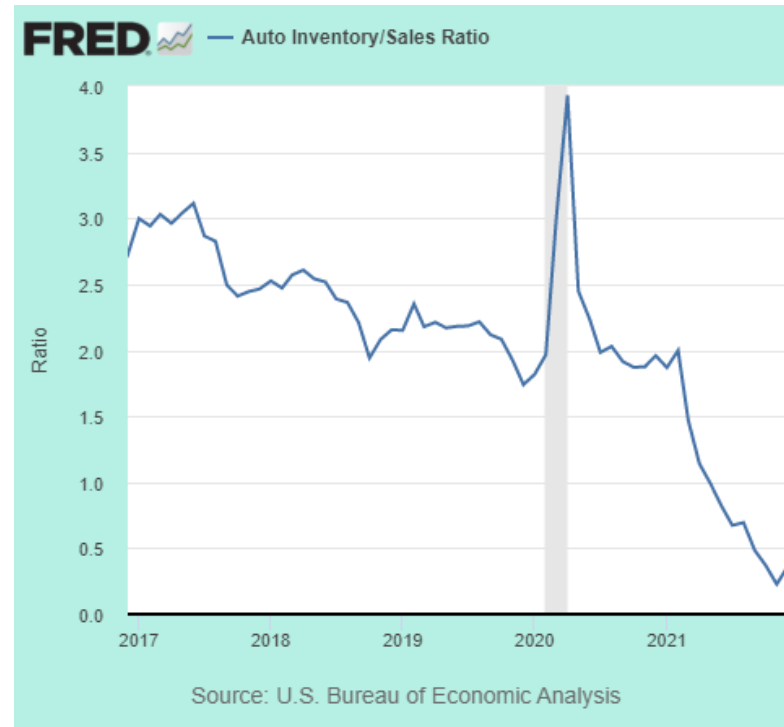
Economic Conditions

INFLATION 1.0

- Inflation increased substantially during 2021, reaching 7.5% increase year-over-year for January 2022.

- Inflation is likely to remain sticky as some goods and services which change price relatively infrequently are showing signs of higher inflation. Supply disruptions adding to higher inflation.

- Highest levels of inflation since the 1980's.

Source: U.S. Bureau of Labor Statistics

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Source: Federal Reserve Bank of Atlanta
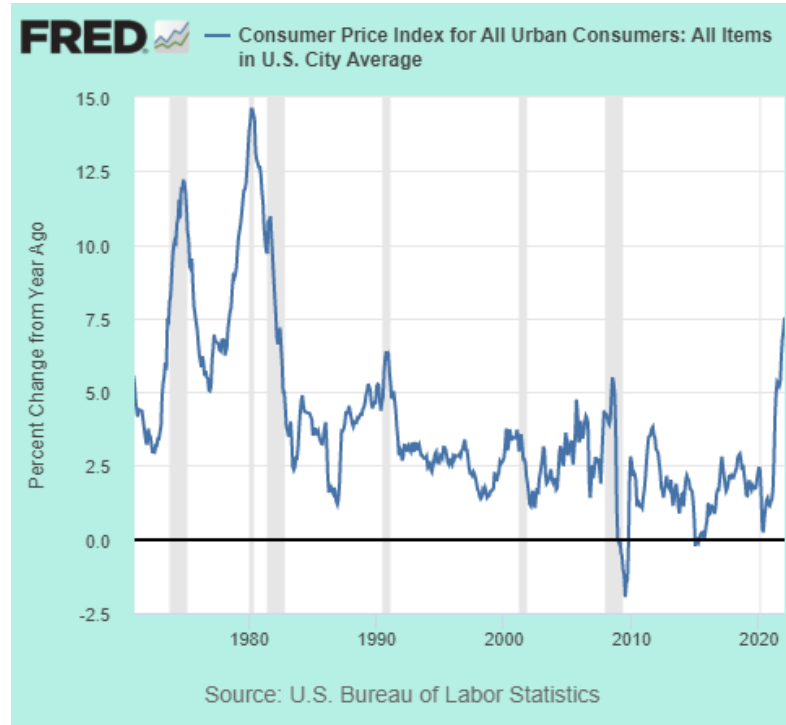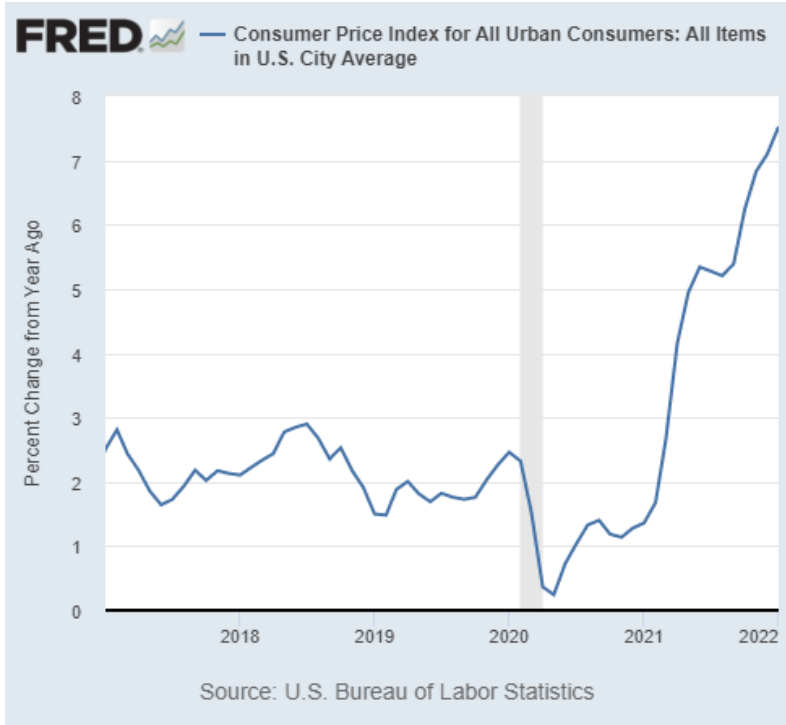
Economic Conditions

INFLATION 2.0

- Cost-push inflation coming due to increases in productions costs mainly driven by material inputs, labor, and transportation costs (as supply chain disruptions).

- Kraft Heinz recently announced increasing prices on many products starting in March of 2022
  - Coffee: 5%
  - Velveeta Cheese: 6.6%
  - Turkey Bacon: 30%
  - Kool-Aid: 20%
  - Cold cuts and hot dogs: 10%

- Kimberly-Clark plans to raise prices of goods through the end of June 2022.

- General Mills to start increasing the price of hundreds of products by a considerable starting in January of 2022

Economic Conditions

WAGES AND LABOR

- Wage increases in South Dakota are outpacing core inflation; however, wages are not outpacing overall inflation. As cost-push inflation comes into play this spring and summer, this will be a metric to watch.

- Across the nation participation rates are still lower than pre-pandemic levels, while South Dakota has recovered for the most part. Unemployment in South Dakota is at pre-pandemic levels.

- Job postings in South Dakota are at very high levels.
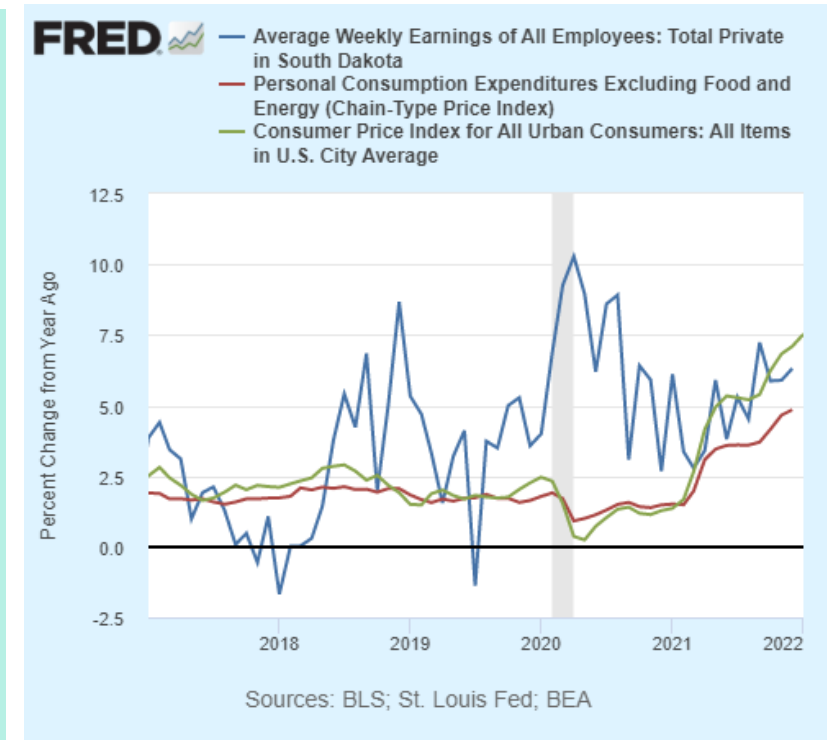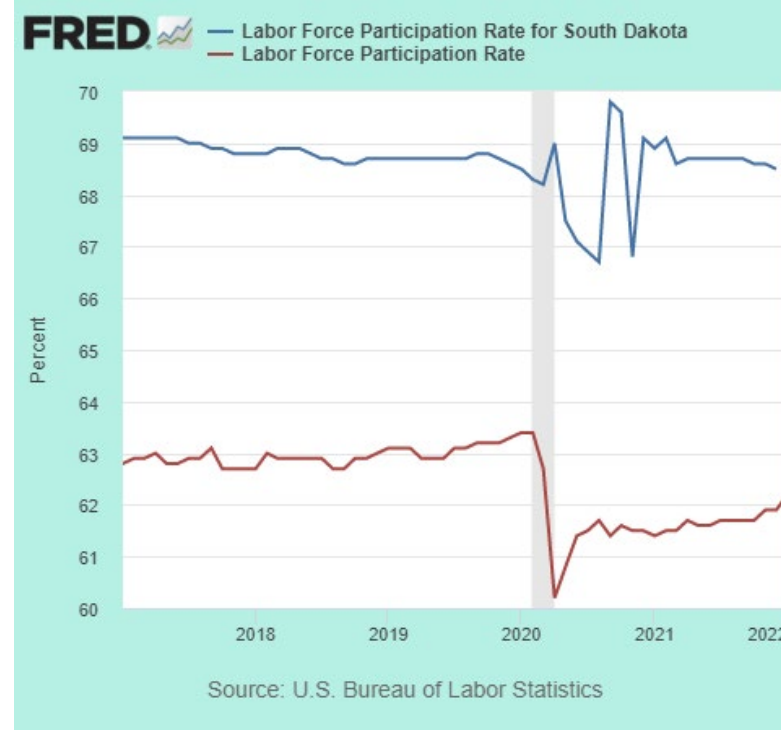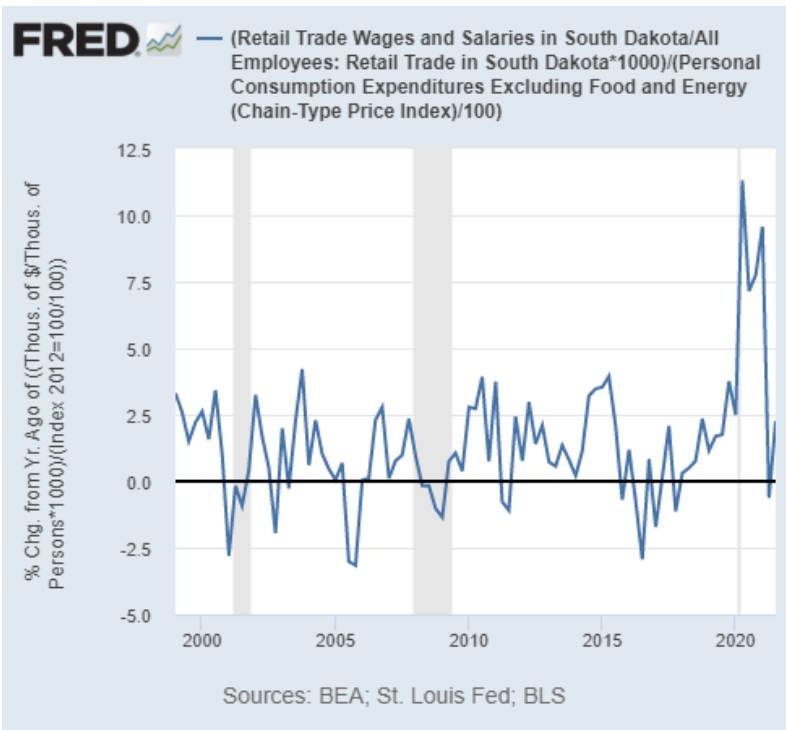
Economic Conditions

FEDERAL DOLLARS

- The amount of federal dollars not been spent will have a stimulating effect on the South Dakota economy. This includes:
  - $1.8 billion in federal coronavirus funding to be spent over the next 24 months.
  - $2.1 billion in federal infrastructure funding passed by Congress to be spent over the next 5 years.
- As the federal dollars flow through the economy, the state will realize increased revenue through sales tax and contractor's excise tax.
- The amount of growth experienced by the State in FY2021 and FY2022 is comprised of three growth components (organic, stimulus, inflation).
- It can be difficult to pinpoint the amount of growth for each component
- If one assumes overall growth is 10%, then the components could be 1% organic, 6% inflation, 3% stimulus

Methodology: Model 1

Holt-Winters Model

- A triple exponential smoothing model, known as the Holt-Winters model, is a statistical forecasting model the Legislative Research Council (LRC) utilizes for estimating revenues. The model utilizes historical revenue data and smooths the data with three parameters - value, trend, and seasonality and creates a model fitted to actuals based on historical data. The fitted model is then used to forecast future revenues. More recent values contribute to the forecast more than earlier values, meaning revenues in 2020 will be weighted more than revenues in 1999.

Methodology: Model 1

Decomposition of additive time series
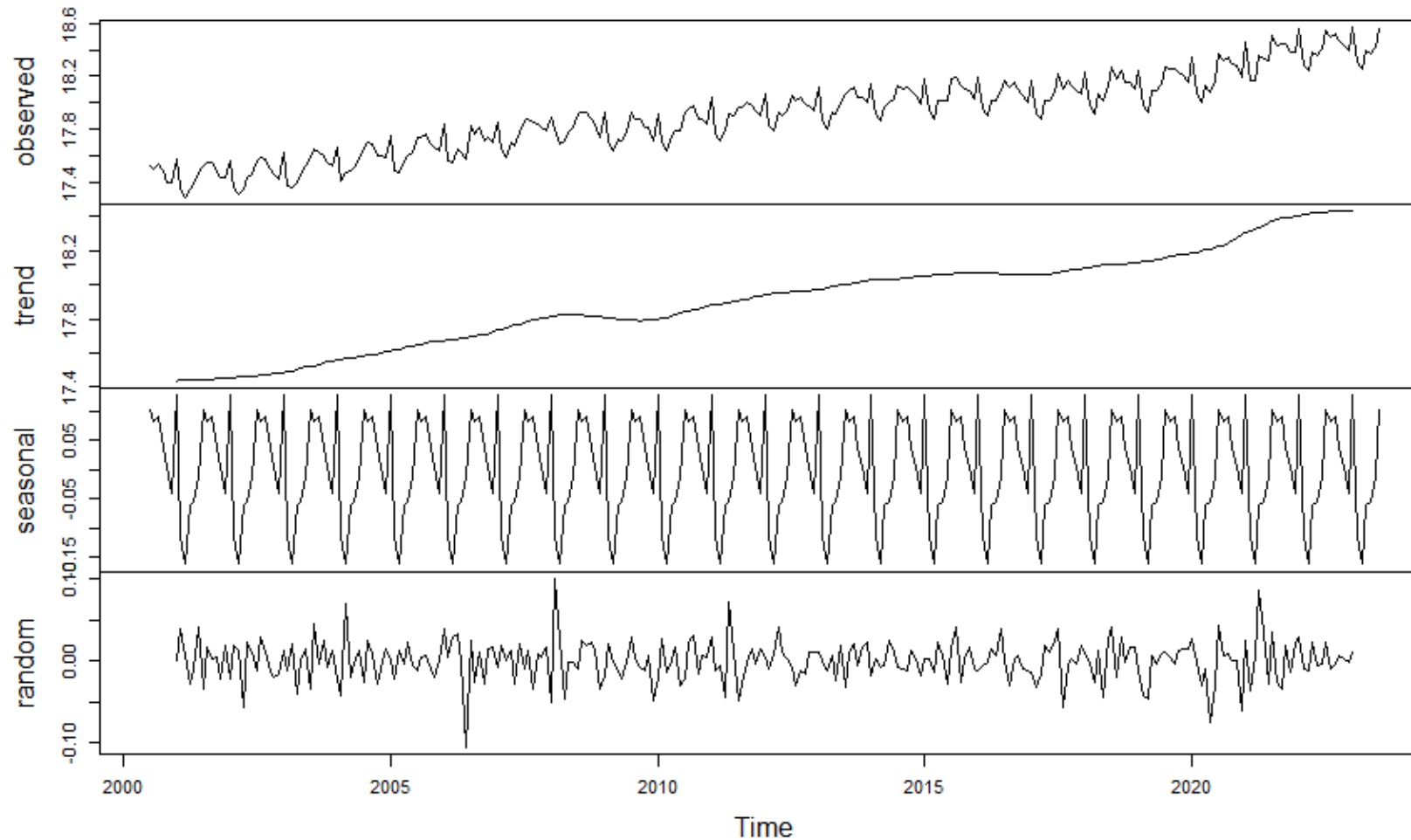
Methodology: Model 2

Auto-Regressive Integrated Moving Average (ARIMA) Model

- The statistical forecasting model of ARIMA is one of the most used approaches to analyzing time series. The LRC also utilizes this model to estimate revenues. ARIMA uses historical data to create a fitted model by adjusting the correlation, differential, and moving average components within the data. The fitted model is then used to forecast future revenues.

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Best model: ARIMA(1,0,3)(0,1,1)[12] with drift
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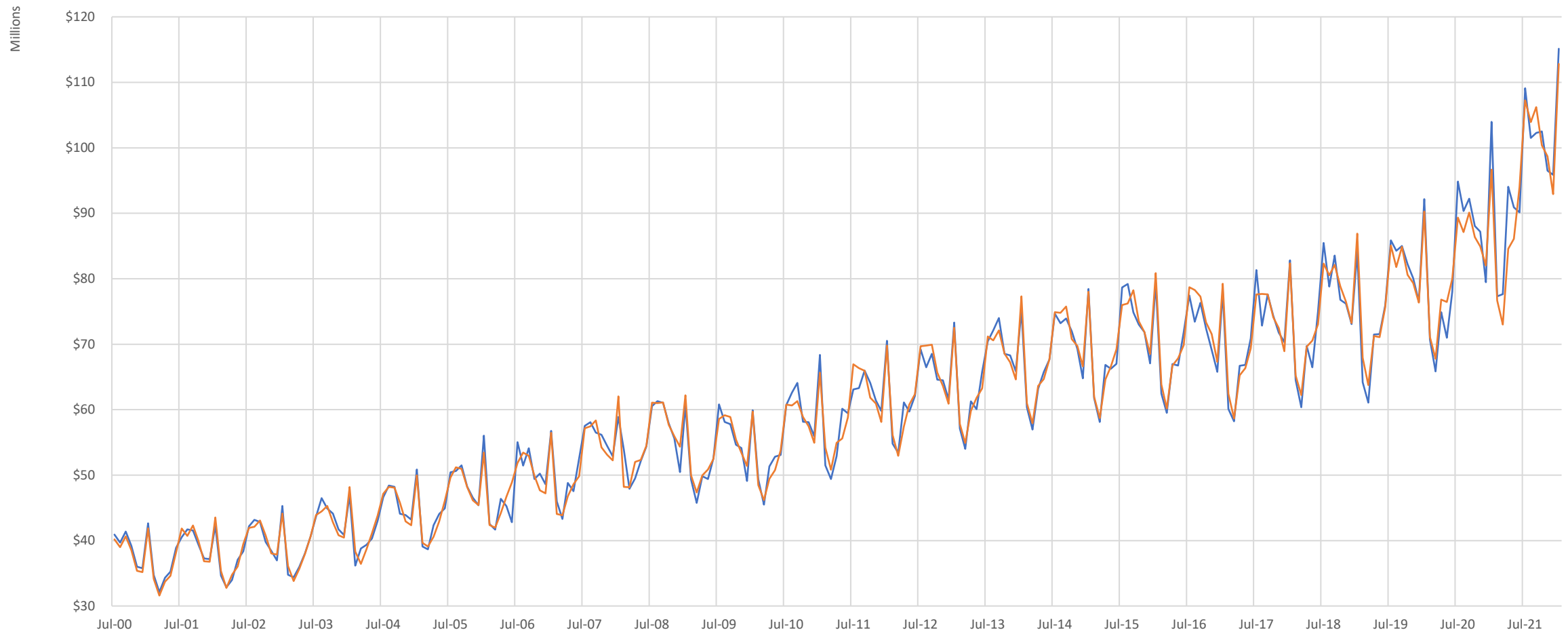
Methodology: GOAL

ARIMA Model Fitted to Base Sales & Use Tax

Methodology: OUTCOME

ARIMA Model Fitted to Base Sales & Use Tax with forecast
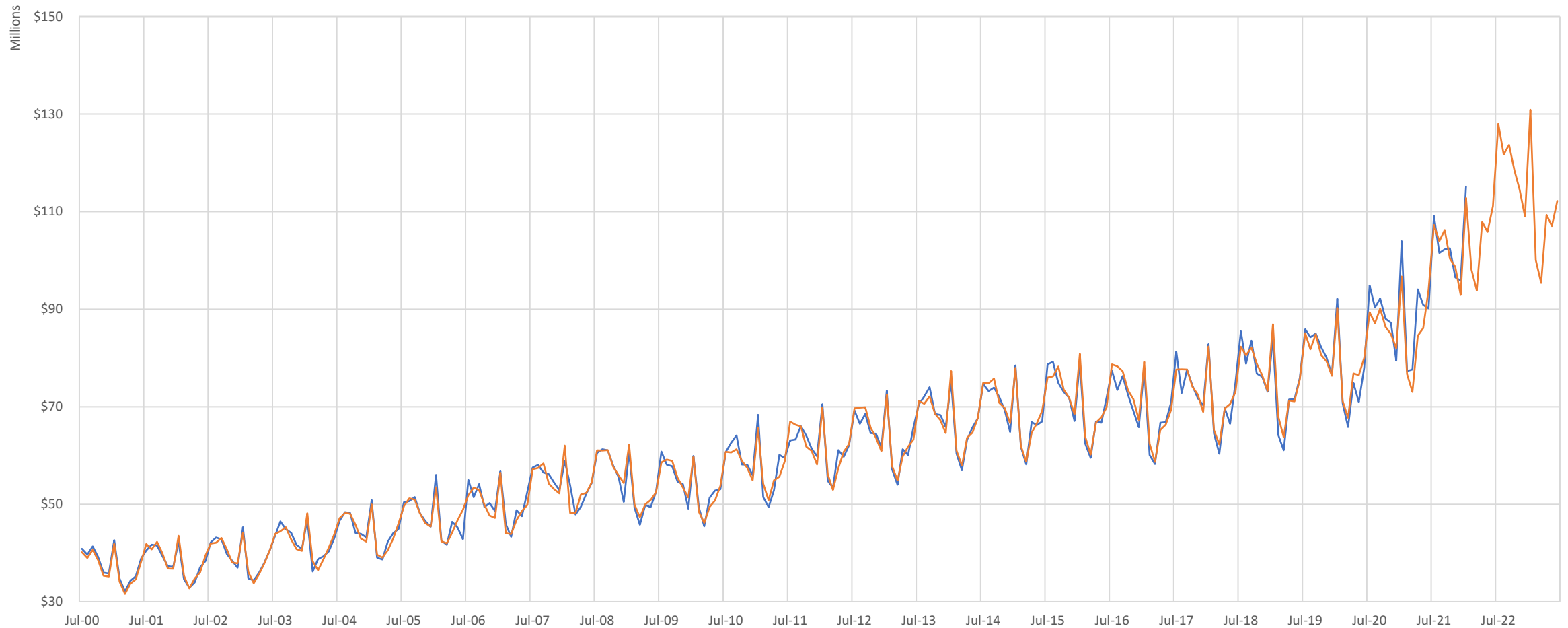
Sales and Use Tax

Sales Tax	Actual FY2018	Actual FY2019	Actual FY2020	Actual FY2021	JCA Adopted FY2022	LRC Revised FY2022	LRC FY2023
Total Revenues	988,823,603	1,025,401,209	1,072,830,649	1,209,342,342	1,102,000,000	1,342,307,262	1,381,932,829
Dollar Change	37,600,522	36,577,606	47,429,440	136,511,693	29,169,351	132,964,920	39,625,567
Percent Change	4.0%	3.7%	4.6%	12.7%	-8.9%	11.0%	3.0%

- YTD collections are 13.7% above the same point in FY2021
- Original projection did not include any effects from the American Rescue Plan Act (ARPA).
- The stimulus checks and injection of federal money provided a boost to the States economy. These dollars will continue to circulate throughout the economy.
- 10-YR average growth (excluding FY2021): 5.1%
- Below normal growth expected in FY2023

Sales & Use Tax: Taxable Sales

| Taxable Dollars Year-over-Year by SIC Code by Industry				
	CY2019	CY2020	$ Change	% Change
Agriculture, Forestry & Fishing	413.2	440.7	27.50	6.7%
Mining	69.7	69.7	0.06	0.1%
Construction	29.5	30.8	1.34	4.5%
Manufacturing	1,188.8	1,756.2	567.40	47.7%
Transportation & Public Utilities	3,019.1	2,863.4	(155.72)	-5.2%
Wholesale Trade	1,764.7	2,222.4	457.67	25.9%
Retail Trade	12,162.0	13,278.0	1,115.99	9.2%
Finance, Insurance, & Real Estate	523.2	572.1	48.88	9.3%
Services	4,402.7	4,384.5	(18.22)	-0.4%
Public Administration	2.9	3.5	0.58	19.9%
Total	23,575.8	25,621.3	2,045.47	8.7%

*Millions of dollars

Taxable Dollars Year-over-Year by SIC Code by Industry				
	CY2020	CY2021	$ Change	% Change
Agriculture, Forestry & Fishing	440.7	486.6	45.9	10.4%
Mining	69.7	79.3	9.6	13.8%
Construction	30.8	35.9	5.1	16.6%
Manufacturing	1,756.2	1,393.6	(362.6)	-20.6%
Transportation & Public Utilities	2,863.4	2,933.1	69.7	2.4%
Wholesale Trade	2,222.4	2,478.3	255.9	11.5%
Retail Trade	13,278.0	15,451.2	2,173.2	16.4%
Finance, Insurance, & Real Estate	572.1	663.5	91.4	16.0%
Services	4,384.5	5,151.8	767.3	17.5%
Public Administration	3.5	8.9	5.4	154.3%
Total	25,621.3	28,682.2	3,060.9	11.9%

*Millions of Dollars

Base Sales & Use Tax Historical Trend

Base Sales & Use Tax Historical Tend

Next Peak = FY 2023??

Next Decline = FY 2024??
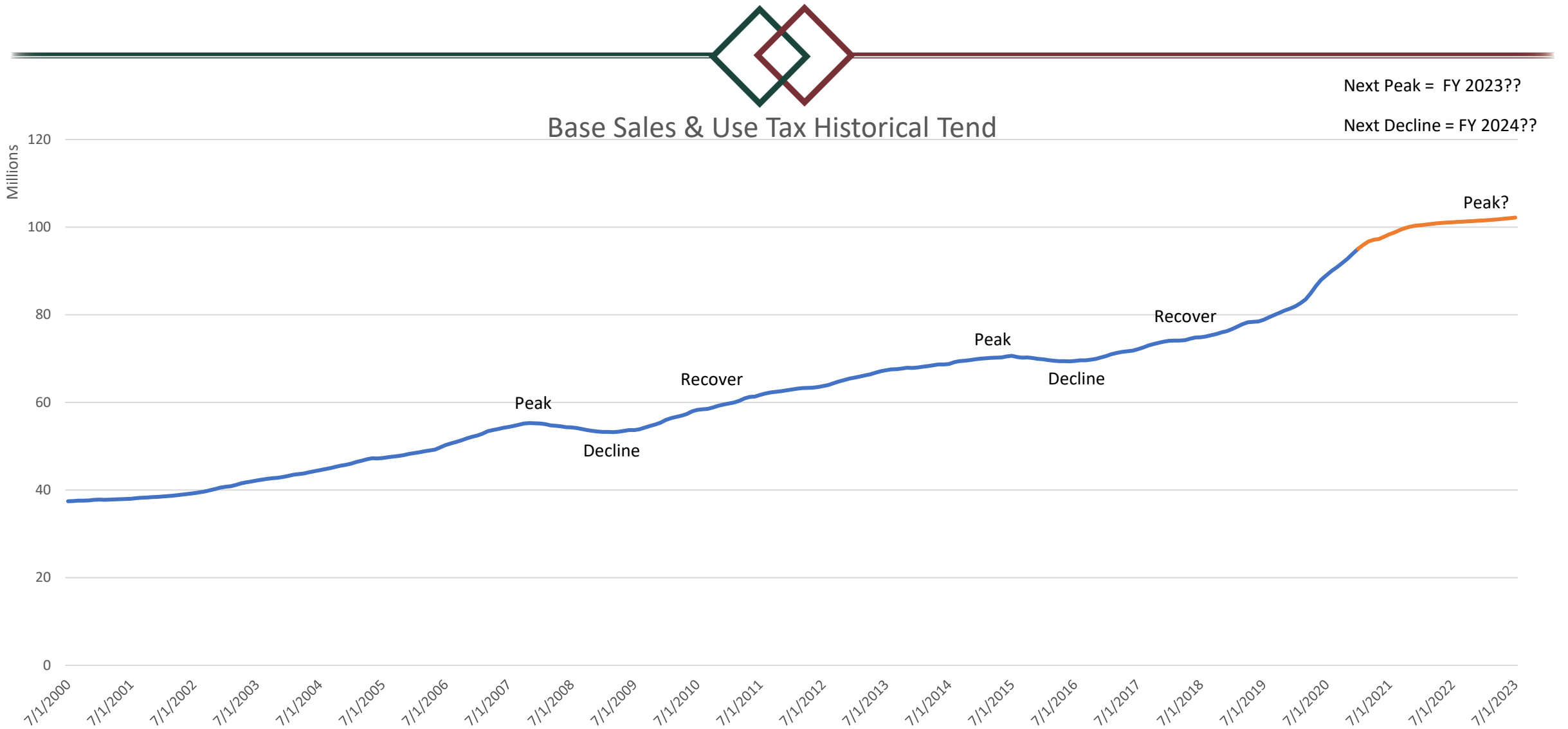
Note: The additional half-penny has been removed to show a comparative analysis over time.

Base Sales Tax Monthly Growth Year-Over-Year
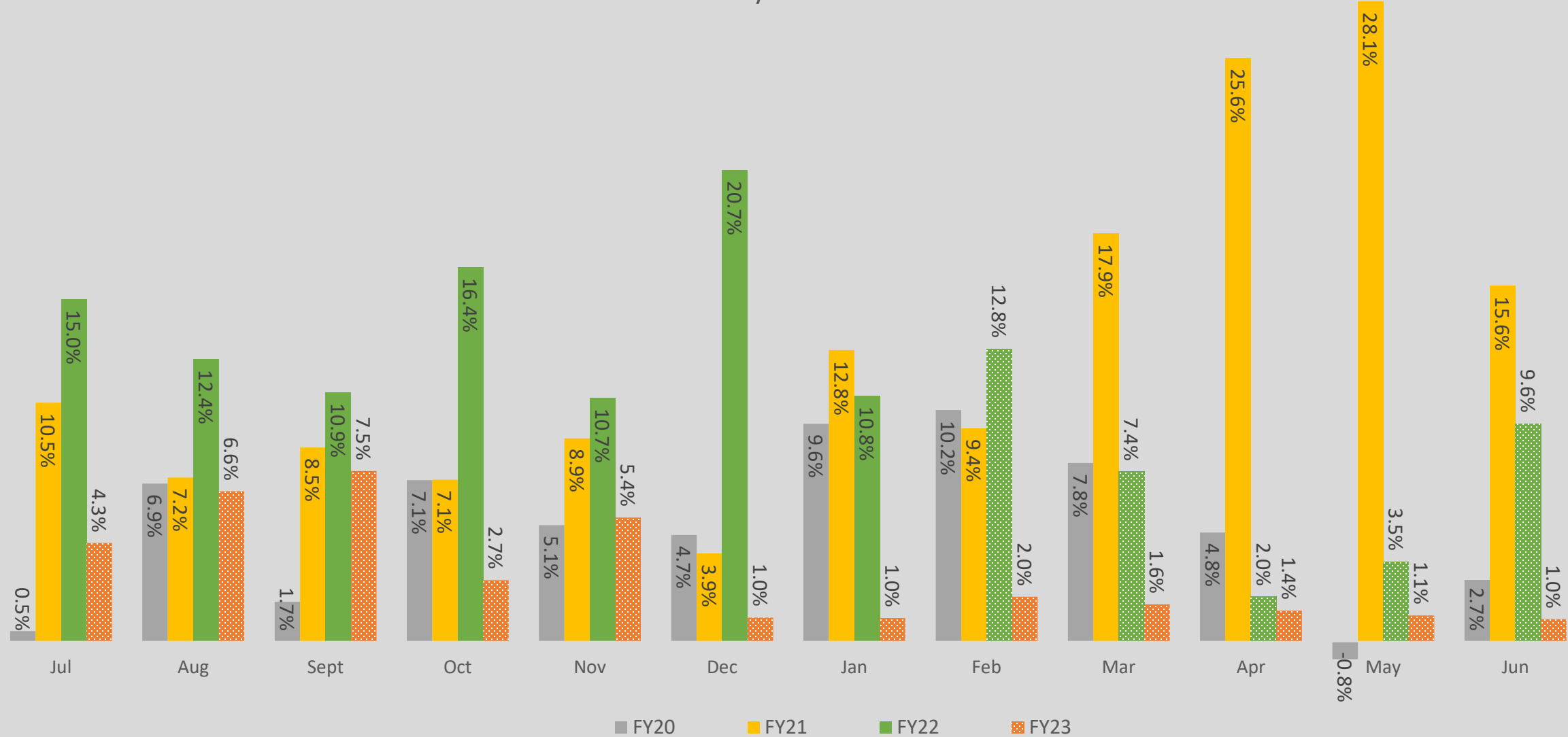
Note: Solid bars represent actual growth, while the shaded bars represent estimated growth based LRC revised estimate

Lottery

Lottery	Actual FY2018	Actual FY2019	Actual FY2020	Actual FY2021	JCA Adopted FY2022	LRC Revised FY2022	LRC FY2023
Total Revenues	116,675,440	123,815,501	122,489,001	155,527,049	132,201,431	167,660,473	175,951,443
Dollar Change	4,848,184	7,140,061	(1,326,500)	33,038,048	9,712,430	12,133,424	8,290,970
Percent Change	4.3%	6.1%	-1.1%	27.0%	-15.0%	7.8%	4.9%

- YTD collections are 17.2% above the same point in FY2021.

- FY2020 was lower due to COVID-19.

- Federal stimulus checks likely added to the increase in video lottery receipts for FY2021.

- More normalized growth is likely to occur in FY2022; however, additional stimulus checks in FY2022 would change the growth expected.

Contractor's Excise Tax

Contractor's Excise Tax	Actual FY2018	Actual FY2019	Actual FY2020	Actual FY2021	JCA Adopted FY2022	LRC Revised FY2022	LRC FY2023
Total Revenues	107,626,628	113,163,617	123,723,519	144,448,267	130,300,000	150,076,688	157,219,785
Dollar Change	798,091	5,536,989	10,559,902	20,724,748	6,576,481	5,628,421	7,143,097
Percent Change	0.7%	5.1%	9.3%	16.8%	-9.8%	3.9%	4.8%

- YTD collections are 4.8% above the same point in FY2021.

- High inflation of construction materials is a factor for the growth of CET and will continue to be a factor if construction material costs remain elevated.

- Historical growth varies from 1% to 5%.

- Additional infrastructure funding and funding for capitol projects should keep contractor's excise tax on the higher end of normal growth over the next several fiscal years.

Insurance Company Tax

Insurance	Actual FY2018	Actual FY2019	Actual FY2020	Actual FY2021	JCA Adopted FY2022	LRC Revised FY2022	LRC FY2023
Total Revenues	91,021,843	90,347,541	93,271,112	97,010,439	94,000,000	97,685,367	101,667,734
Dollar Change	7,750,311	(674,302)	2,923,571	3,739,327	728,888	674,928	3,982,367
Percent Change	9.3%	-0.7%	3.2%	4.0%	-3.1%	0.7%	4.1%

- YTD collections are 0.6% higher than the same point in FY2021.

- Some companies will pay quarterly, if they owe more, instead of writing a large check in late March.

- Insurance will not know exact amounts owed from insurance companies until after March filing deadline.

Unclaimed Property

Unclaimed Property	Actual FY2018	Actual FY2019	Actual FY2020	Actual FY2021	JCA Adopted FY2022	LRC Revised FY2022	LRC FY2023
Total Revenues	52,766,031	48,573,600	47,308,472	62,809,930	41,500,000	63,203,410	54,098,774
Dollar Change	8,379,811	(4,192,431)	(1,265,128)	15,501,458	(5,808,472)	393,480	(9,104,636)
Percent Change	18.9%	-7.9%	-2.6%	32.8%	-33.9%	0.6%	-14.4%

- YTD net collections are 3.3% above the same point in FY2021.
- Higher receipts of unclaimed property and lower claims have contributed to the higher than anticipated net revenue from unclaimed property for FY2022.
- Slightly lower revenues and higher claims are expected in FY2023.

Licenses, Permits, Fees

Licenses, Permits, Fees	Actual FY2018	Actual FY2019	Actual FY2020	Actual FY2021	JCA Adopted FY2022	LRC Revised FY2022	LRC FY2023
Total Revenues	67,492,051	68,758,069	68,278,839	71,212,896	70,000,000	70,601,271	73,252,503
Dollar Change	2,761,876	1,266,018	(479,230)	2,934,057	1,721,161	(611,625)	2,651,232
Percent Change	4.3%	1.9%	-0.7%	4.3%	-1.7%	-0.9%	3.8%

- YTD collections are (1.6)% below the same point in FY2021.

Total On-Going Revenue

| On-going Total	Actual FY2018	Actual FY2019	Actual FY2020	Actual FY2021	JCA Adopted FY2022	LRC Revised FY2022	LRC FY2023
Total Revenues	1,593,405,861	1,641,203,288	1,699,623,137	1,936,198,459	1,742,576,075	2,085,472,672	2,136,848,436
Dollar Change	52,611,888	47,797,427	58,419,849	236,575,322	42,952,938	149,274,213	51,375,764
Percent Change	3.4%	3.0%	3.6%	13.9%	-10.0%	7.7%	2.5%

- YTD collections are 10.7% above the same point in FY2021.
- FY2022 growth is likely to be above normal.
- Overall growth for FY2022 is likely to decline from the current 10.7% to 7.7% by year end.
- FY2023 total on-going revenue is likely to have lower than normal growth.
- 10-YR average growth excluding outliers is 3.7%.

Total On-Going Revenue

History of Actual On-going General Fund Receipts	$ Y/Y Growth	% Y/Y Growth
FY2010*	-30.8	-2.7%
FY2011	53.7	4.8%
FY2012	72.9	6.3%
FY2013	22.3	1.8%
FY2014*	95.6	7.6%
FY2015	27.6	2.0%
FY2016	57.0	4.1%
FY2017*	102.4	7.1%
FY2018	52.6	3.4%
FY2019	47.8	3.0%
FY2020	58.4	3.6%
FY2021*	236.6	13.9%
10-year avg.	77.3	5.3%
Average w/o Outliers	49.0	3.7%
FY2022 LRC Revised*	149.3	7.7%
FY2023 LRC Forecast	51.4	2.5%
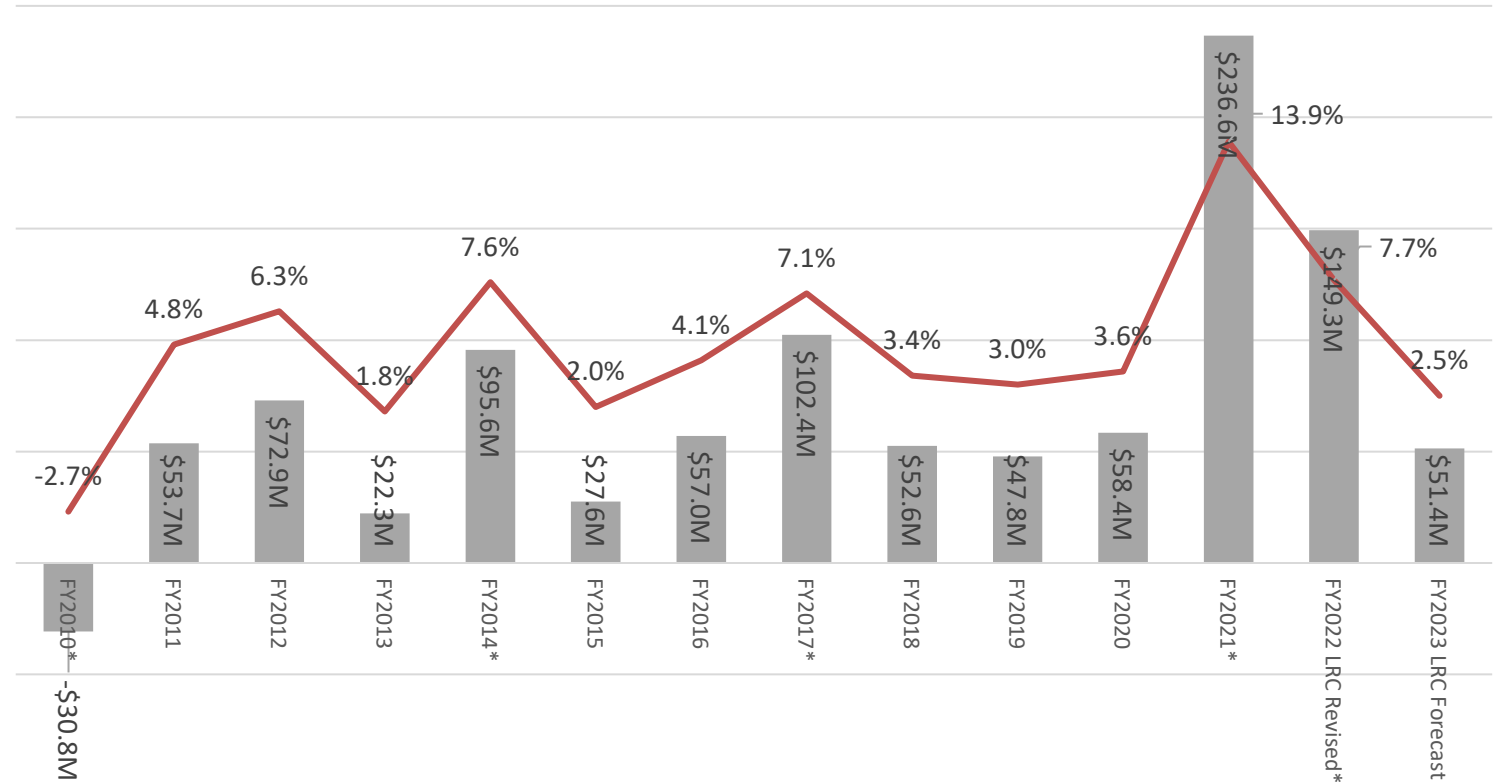
*Outlier year

Amounts not adjusted for inflation

Yearly Growth of On-going General Fund Receipts

FY2022 General Fund Revenues

February 14, 2022

On-going Receipts	LRC Original FY22 2/10/2021	Legislature Adopted FY22	Governor's Dec. Revised FY22	LRC Revised FY22	$ Change from Governor's Revised	$ Change from Legislature Adopted FY22	% Growth over FY21 Actual
Sales & Use Tax	1,195,848,512	1,157,606,191	1,250,085,781	1,342,307,262	92,221,481	184,701,071	11.0%
Lottery	142,863,904	139,393,130	161,112,839	167,660,473	6,547,634	28,267,343	7.8%
Contractor's Excise Tax	145,287,366	141,633,824	147,591,027	150,076,688	2,485,661	8,442,864	3.9%
Insurance Company Tax	98,346,583	97,376,447	100,643,775	97,685,367	(2,958,408)	308,920	0.7%
Unclaimed Property	50,685,813	45,342,907	54,887,304	63,203,410	8,316,106	17,860,503	0.6%
Licenses, Permits, and Fees	70,972,495	70,353,289	70,591,134	70,601,271	10,137	247,982	-0.9%
Tobacco Taxes	52,993,832	52,484,357	51,132,177	52,029,951	897,774	(454,406)	-0.5%
Trust Funds	43,053,117	43,053,117	43,501,898	43,495,270	(6,628)	442,153	4.5%
Net Transfers In	20,700,293	20,700,293	22,489,602	23,590,200	1,100,598	2,889,907	0.5%
Alcohol Beverage Tax	8,818,908	8,707,962	8,840,735	9,021,173	180,438	313,211	2.9%
Bank Franchise Tax	14,222,896	14,941,359	17,911,177	17,426,070	(485,107)	2,484,711	-6.8%
Charges for Goods & Services^	16,671,005	15,225,703	15,412,432	15,016,233	(396,199)	(209,470)	-8.7%
Telecommunications Tax	4,095,916	4,568,114	3,049,859	2,888,813	(161,046)	(1,679,301)	-17.9%
Mineral Severance Taxes	7,375,297	7,855,207	7,859,847	7,927,183	67,336	71,976	-19.2%
Interest Income & Interest	11,343,168	11,423,584	19,738,729	19,704,989	(33,740)	8,281,405	6.0%
Alcohol Bev. 2% Wholesale Tax	2,795,533	2,647,955	2,690,958	2,838,696	147,738	190,741	9.3%
Subtotal On-going Receipts	**1,886,074,638**	**1,833,313,439**	**1,977,539,274**	**2,085,473,049**	**107,933,775**	**252,159,610**	**7.7%**
One-Time Receipts							
Obligated Cash Carried Forward			85,875,130	85,875,130	-		
One-time Unclaimed Property Receipts			**	-	-		
One-time Sales and Use Tax		25,000,000	28,305,843	28,305,843	-		
Bank Franchise Tax Prior Year Revenue			-	-	-		
Transfer from Budget Reserve			28,012,008		(28,012,008)		
Prior Period Adjustments			5,332,982	5,332,982	-		
Subtotal One-Time Receipts		25,000,000	147,525,963	130,084,662	(17,441,301)		
GRAND TOTAL		**1,858,313,439**	**2,125,065,237**	**2,205,403,321**	**80,338,084**	**347,089,882**	

*FY2022 original estimates did not include any fiscal impact from American Rescue Plan Act (ARPA).

^Original estimate does not include the change of shifting ORC revenues to other funds

**For comparison purposes, the estimated one-time unclaimed property receipts have been added to on-going

FY2023 General Fund Revenues

February 14, 2022

On-going Receipts	Governor's Dec. FY23	LRC Revised FY22	LRC FY23 Estimate	$ Change from Governor's Rec.	$ Change from LRC Revised FY22	% Change from LRC Revised FY22
Sales & Use Tax	1,255,854,578	1,342,307,262	1,381,932,829	126,078,251	39,625,567	3.0%
Lottery	164,019,294	167,660,473	175,951,443	11,932,149	8,290,970	4.9%
Contractor's Excise Tax	150,205,144	150,076,688	157,219,785	7,014,641	7,143,097	4.8%
Insurance Company Tax	104,242,670	97,685,367	101,667,734	(2,574,936)	3,982,367	4.1%
Unclaimed Property	40,000,000	63,203,410	54,098,774	14,098,774	(9,104,636)	-14.4%
Licenses, Permits, and Fees	70,666,353	70,601,271	73,252,503	2,586,150	2,651,232	3.8%
Tobacco Taxes	50,008,340	52,029,951	51,861,093	1,852,753	(168,858)	-0.3%
Trust Funds	46,573,031	43,495,270	46,255,321	(317,710)	2,760,051	6.3%
Net Transfers In	23,115,825	23,590,200	24,354,780	1,238,955	764,580	3.2%
Alcohol Beverage Tax	9,044,956	9,021,173	8,950,464	(94,492)	(70,709)	-0.8%
Bank Franchise Tax	17,021,259	17,426,070	16,863,763	(157,496)	(562,307)	-3.2%
Charges for Goods & Services	15,545,036	15,016,233	15,549,763	4,727	533,530	3.6%
Telecommunications Tax	2,988,861	2,888,813	2,347,707	(641,154)	(541,106)	-18.7%
Mineral Severance Taxes	7,531,720	7,927,183	8,111,495	579,775	184,312	2.3%
Interest Income & Interest	16,213,891	19,704,989	15,645,108	(568,783)	(4,059,881)	-20.6%
Alcohol Bev. 2% Wholesale Tax	2,837,966	2,838,696	2,796,726	(41,240)	(41,970)	-1.5%
Subtotal On-going Receipts	**1,975,868,924**	**2,085,473,049**	**2,136,859,288**	**160,990,364**	**51,386,239**	**2.5%**
One-Time Receipts						
	-		-		-	
GRAND TOTAL	**1,975,868,924**		**2,136,859,288**	**160,990,364**	**51,386,239**	**2.5%**