

BUDGET FORECASTING

GFOAZ BUDGET FORUM
MAY 19TH, 2022
SURPRISE, AZ

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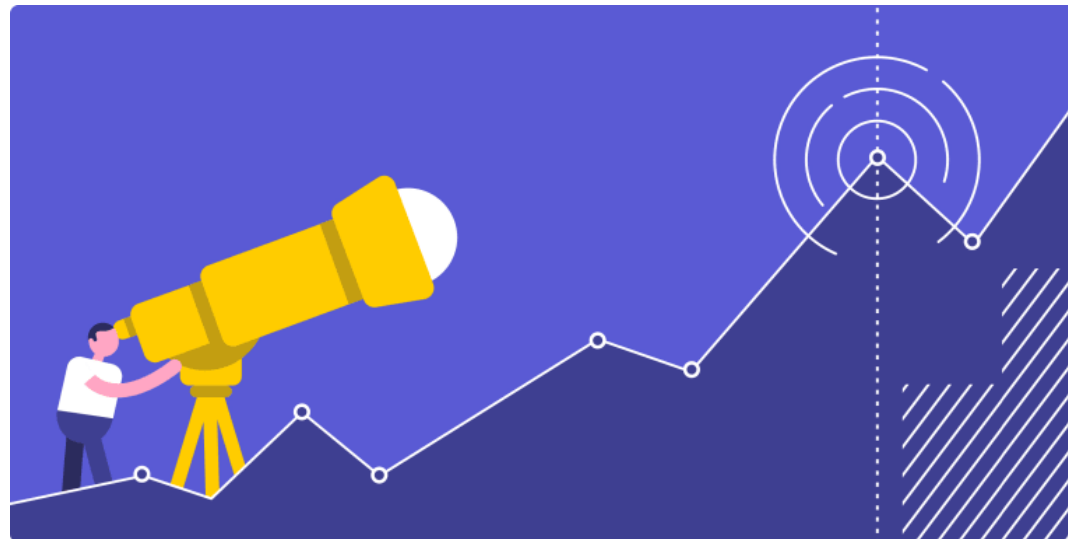
Presentation Overview

■ Approaches to Forecasting

- *Public Purpose & Desired Outcomes*
- *Science versus Art of Forecasting*
- *Short-Term versus Long-Term Forecasting*
- *Simple Ways to Improve Forecasts*
- *Processes & Reports*

Public Purpose

- Provide expenditure and revenue forecast information to assist in managing the City's short- and long-term financial resources
- Desired Outcome:
 - *Stakeholders receive accurate, reliable and timely forecast information*



Forecast Approach

Much more than just math

- City of Mesa adopts a “conservative” forecast approach as opposed to an “objective” forecast approach
- A conservative approach improves the City’s ability to respond to unexpected events
- Drivers of major revenue sources for the City are largely out of our direct control
 - *Economic conditions (inflation, sales tax, income tax)*
 - *Climate conditions (water and electric utility usage)*
- Forecast credibility can improve over time when there are performance measures to emphasize accuracy

Financial Principles

General Governmental Funds

- Balanced net sources and uses
- 10%-15% reserve fund balance over the 5-year forecast period
- Sustainability of programs and services
- Keep wages and benefits competitive
- Investment in capital and lifecycle replacement projects

Utility Fund

- Balanced net sources and uses
- 20% or higher reserve fund balance
- Rate adjustments that are predictable and smoothed throughout the forecast
- Equity between residential and non-residential rates
- Affordable utility services

Major Revenue Sources



General Governmental Revenues

City Sales Tax, State Shared
Sales Tax, Urban Revenue
Sharing & Vehicle License
Tax



Transportation- Related Revenues

City Sales Tax & Highway
User Revenue Fund



Utility Revenues

Water, Wastewater,
Solid Waste, Natural
Gas, Electric

Forecasting



VS



FORECASTING AS A *SCIENCE*

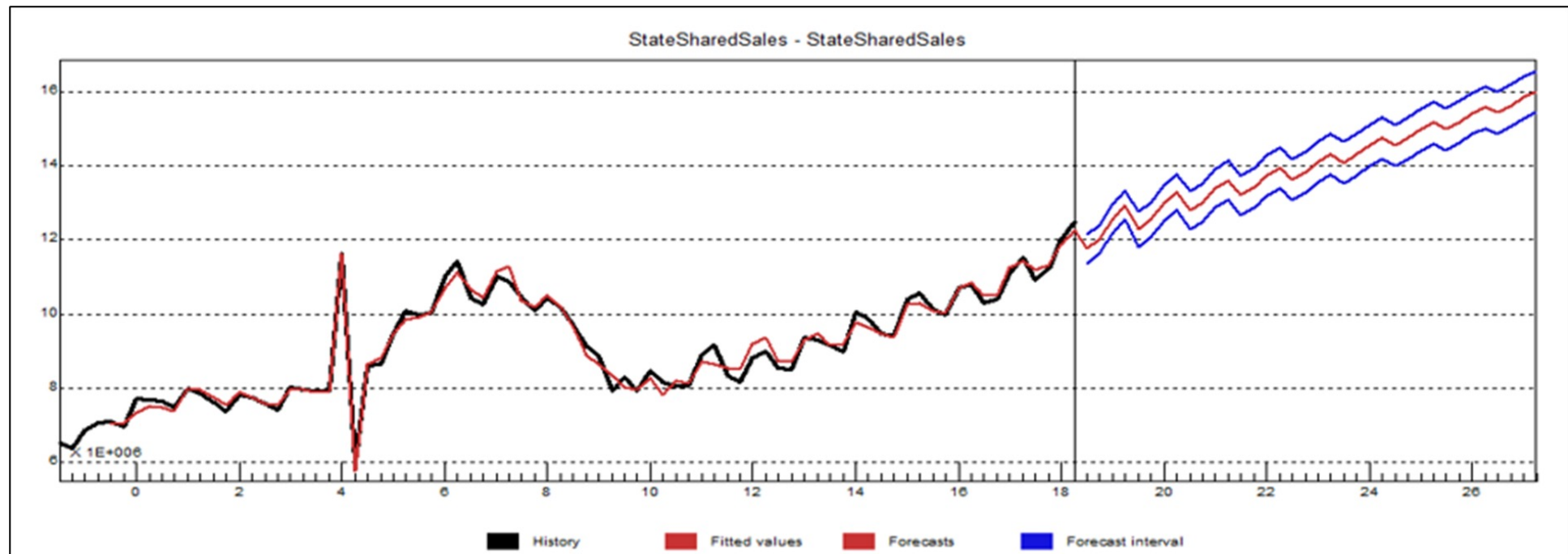
Understand your data

- Create institutional knowledge
 - *Observe/Analyze*
 - *Share/Dialogue*
 - *Document*
- Identifying changes in the forecast fundamentals
 - *Population, employment, inflation growth*
- Growth patterns in various parts of the City
 - *Solid Waste: citywide service area*
 - *Natural Gas: about half the City of Mesa and a portion of San Tan Valley*
 - *Electric: about 5 square miles in downtown Mesa*



Forecasting Models

- Smoothing models, time series methods and/or multivariate regressions
- Consider macroeconomic inputs into the models
- Control for specific events, past and future

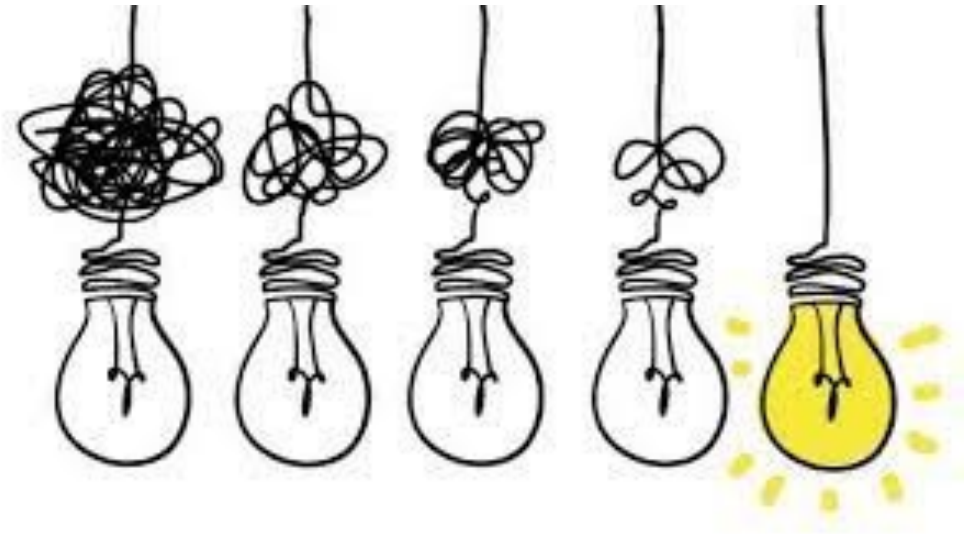


Understanding Trends



Keep it simple

- Complex methods does not mean better
 - *Who is your audience?*

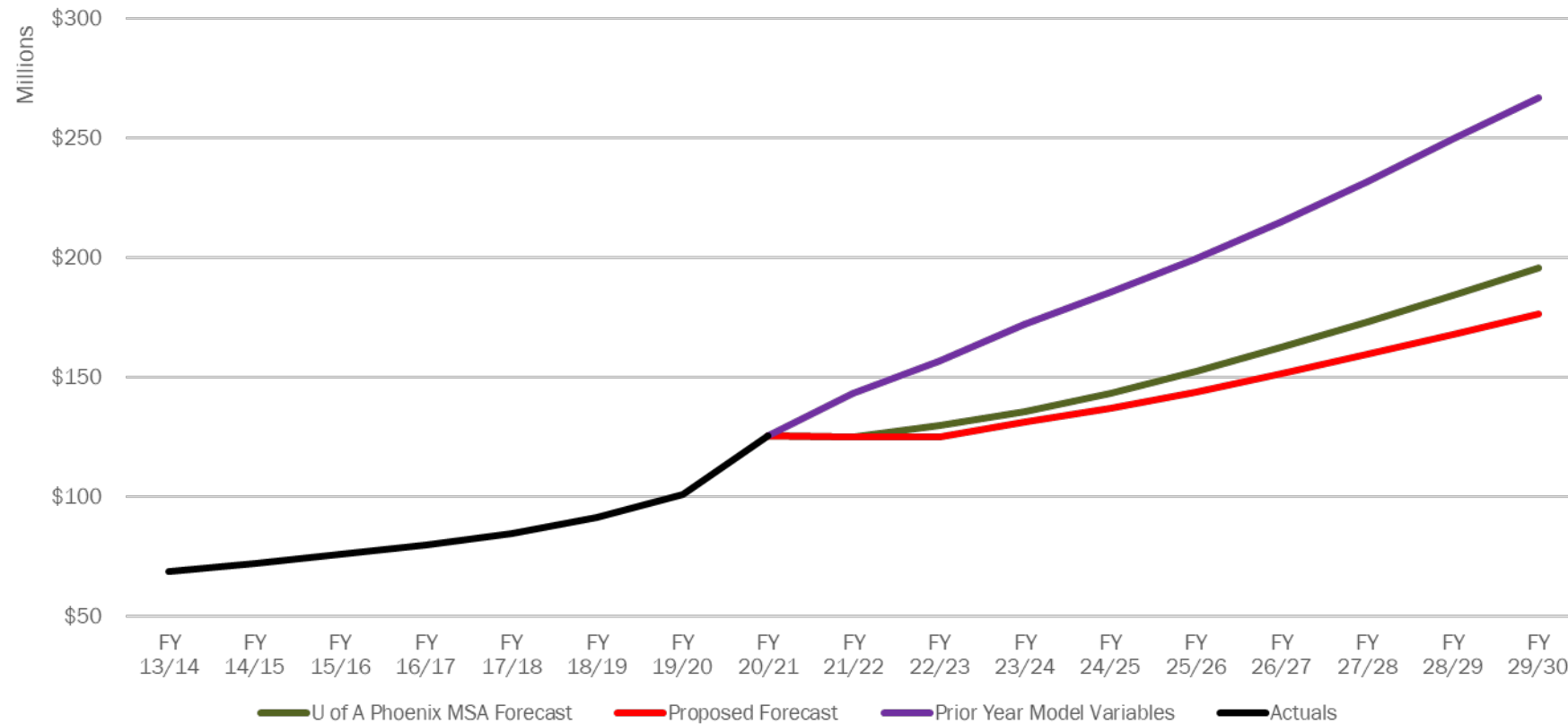


"All models are wrong, but some are useful"
- George Box

FORECASTING AS AN *ART*

City Sales Tax Forecast - Retail

- Sometimes econometric models can yield unrealistic results that need to be adjusted



How to Incorporate Economic Uncertainty into the Forecast

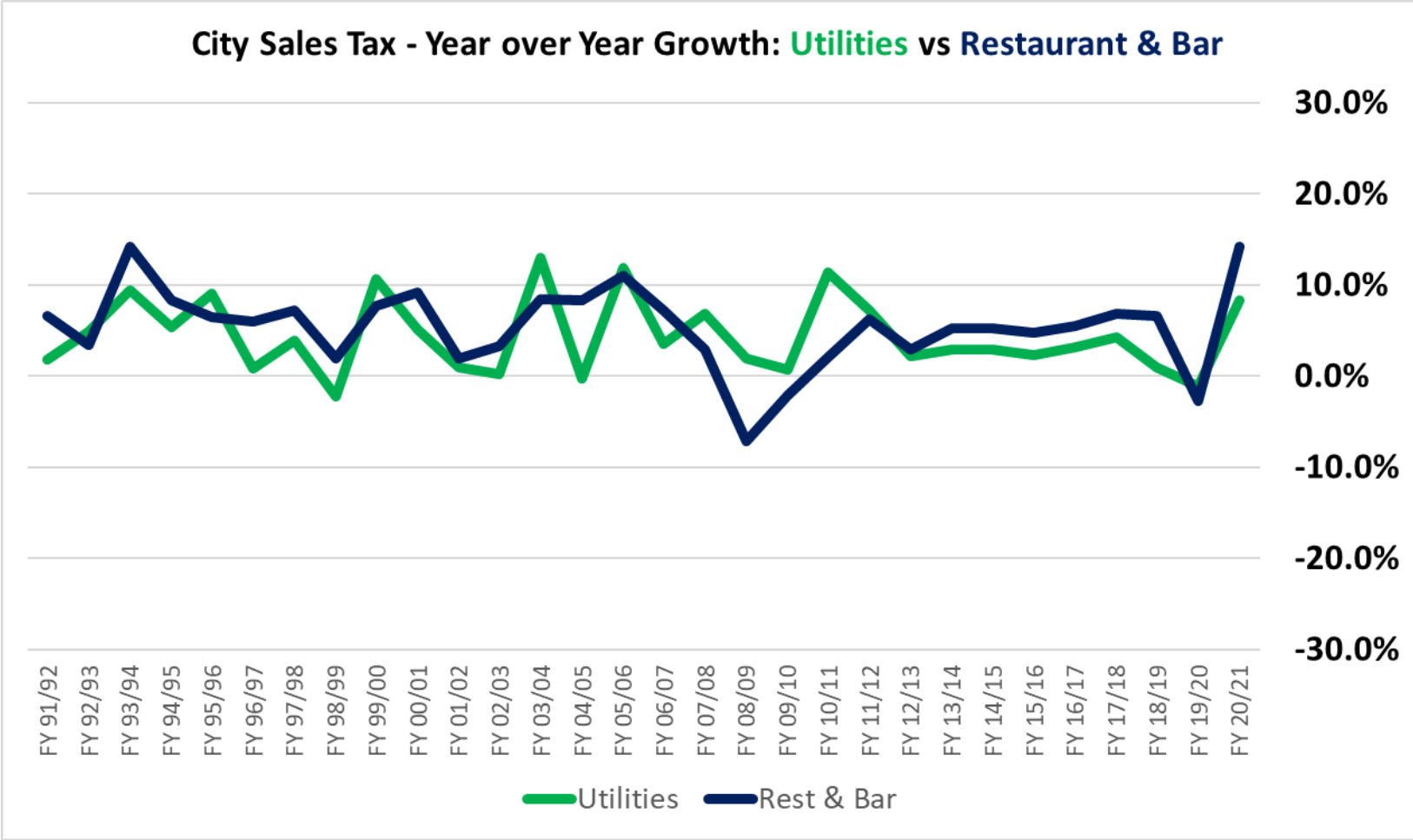
- Macro-economic conditions are out of the direct control of the City
- A conservative approach may mean including an economic correction or recession into the forecast horizon
- Legislative changes
 - *Flat tax*
 - *HURF*



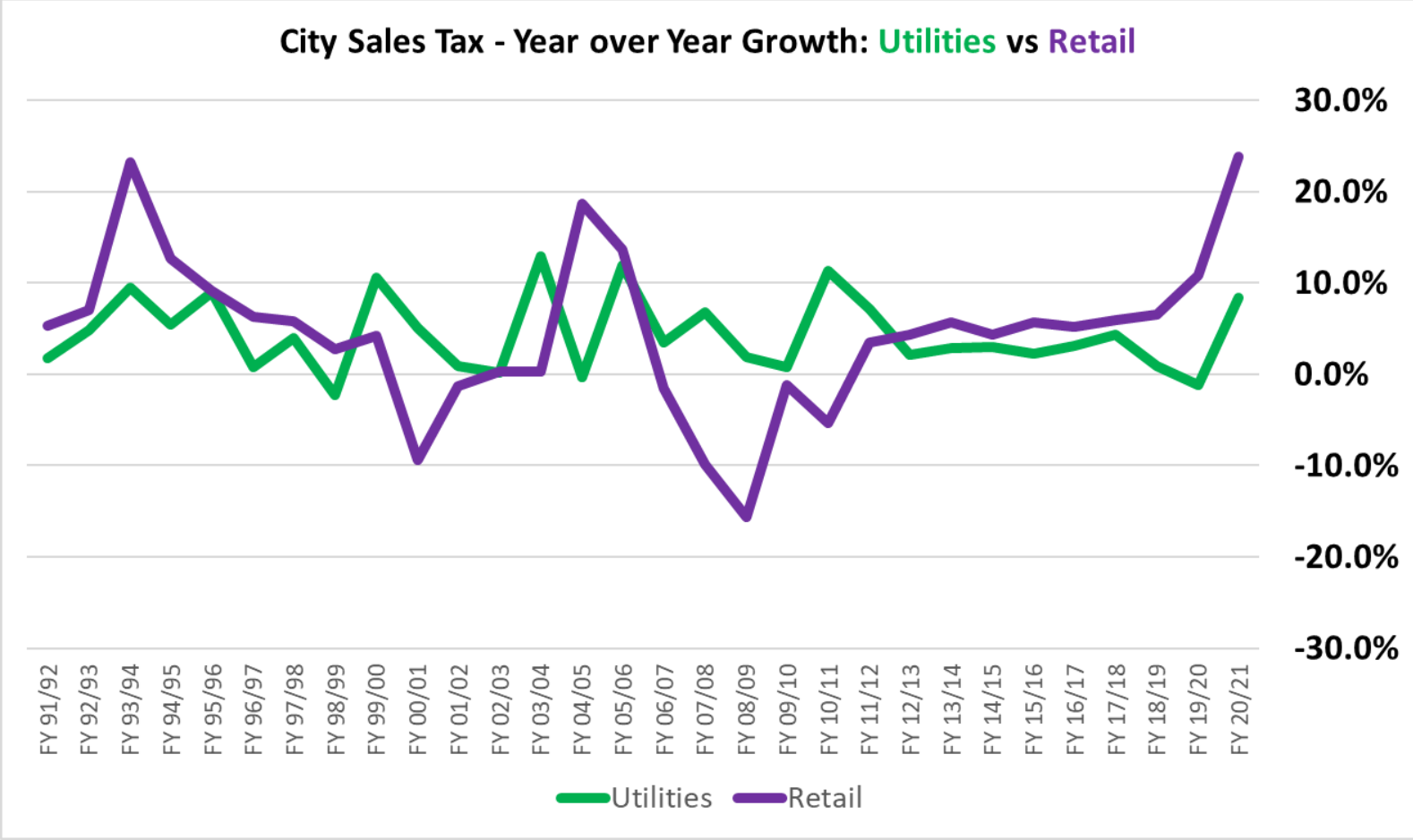
Economic Uncertainty

- Reviewing impacts of prior recessions
 - *1990/91 and 2001 recessions had a slight negative impact on Retail and larger negative impact on Contracting*
 - *2008 recession negatively impacted all sales tax categories, with a severe impact to Contracting*
 - *2020 recession had a short negative impact to Retail and Restaurant & Bar, but federal legislation later increased local spending*
- Assess sales tax revenues by category
- Recession impacts to revenue sources vary significantly
 - *Very volatile: Contracting sales tax and Urban Revenue Sharing*
 - *Relatively stable: Utilities sales tax*

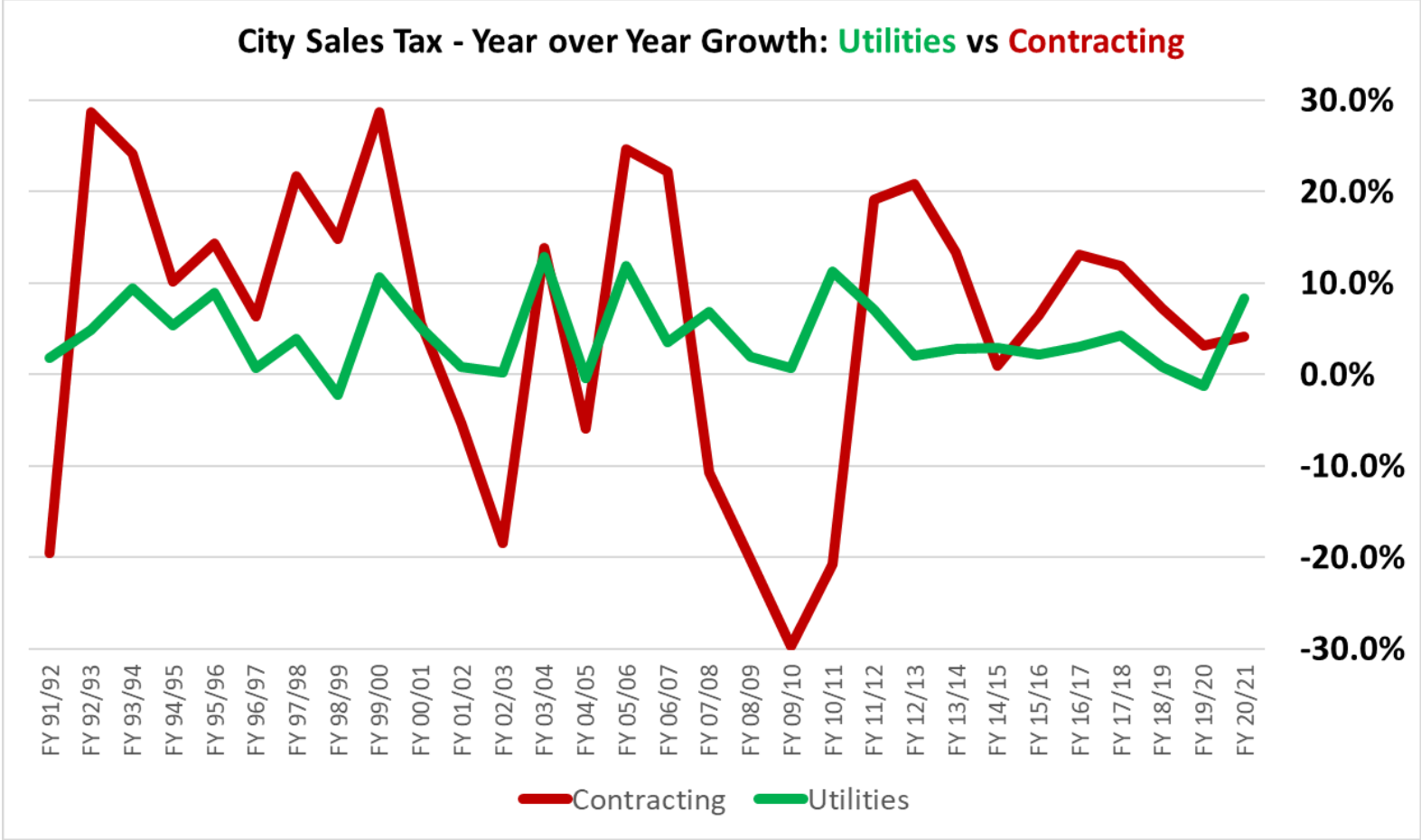
Economic Recessions by Sales Tax Category



Economic Recessions by Sales Tax Category



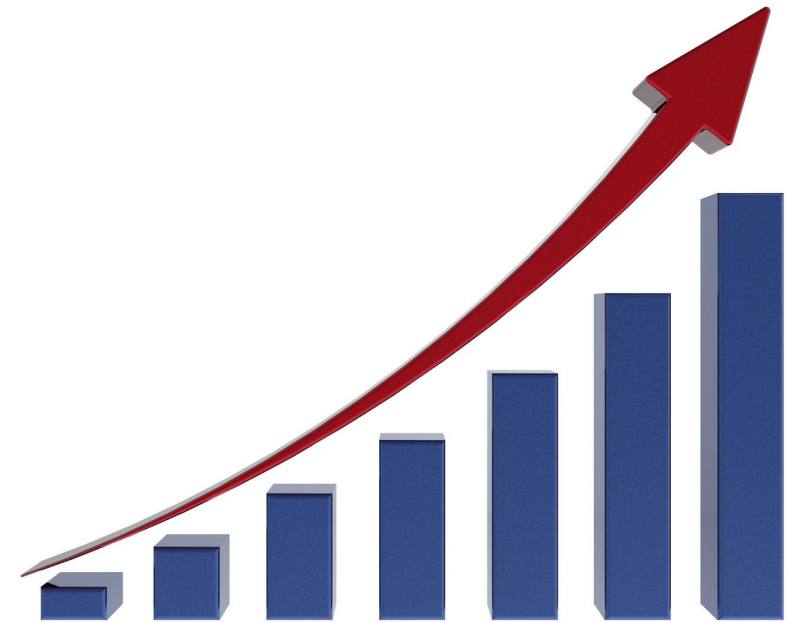
Economic Recessions by Sales Tax Category



SHORT-TERM AND LONG- TERM FORECASTING

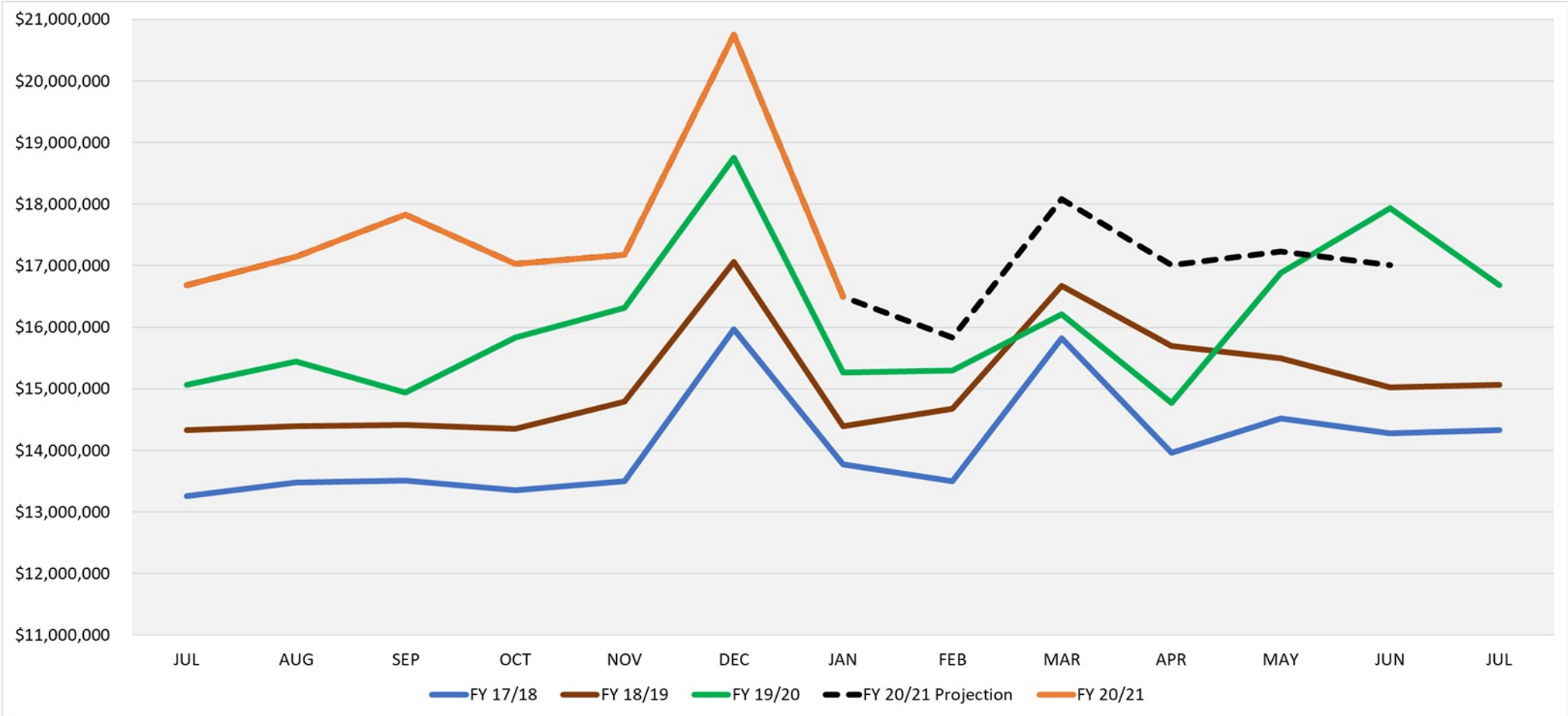
Short-Term vs Long-Term Forecasting

- Short-term forecasting refers to a period of time from less than a year to two years
 - *Adjusted on a quarterly basis at minimum*
- Long-term forecasting refers to a period of time beyond two years
 - *Adjusted once or twice per year*



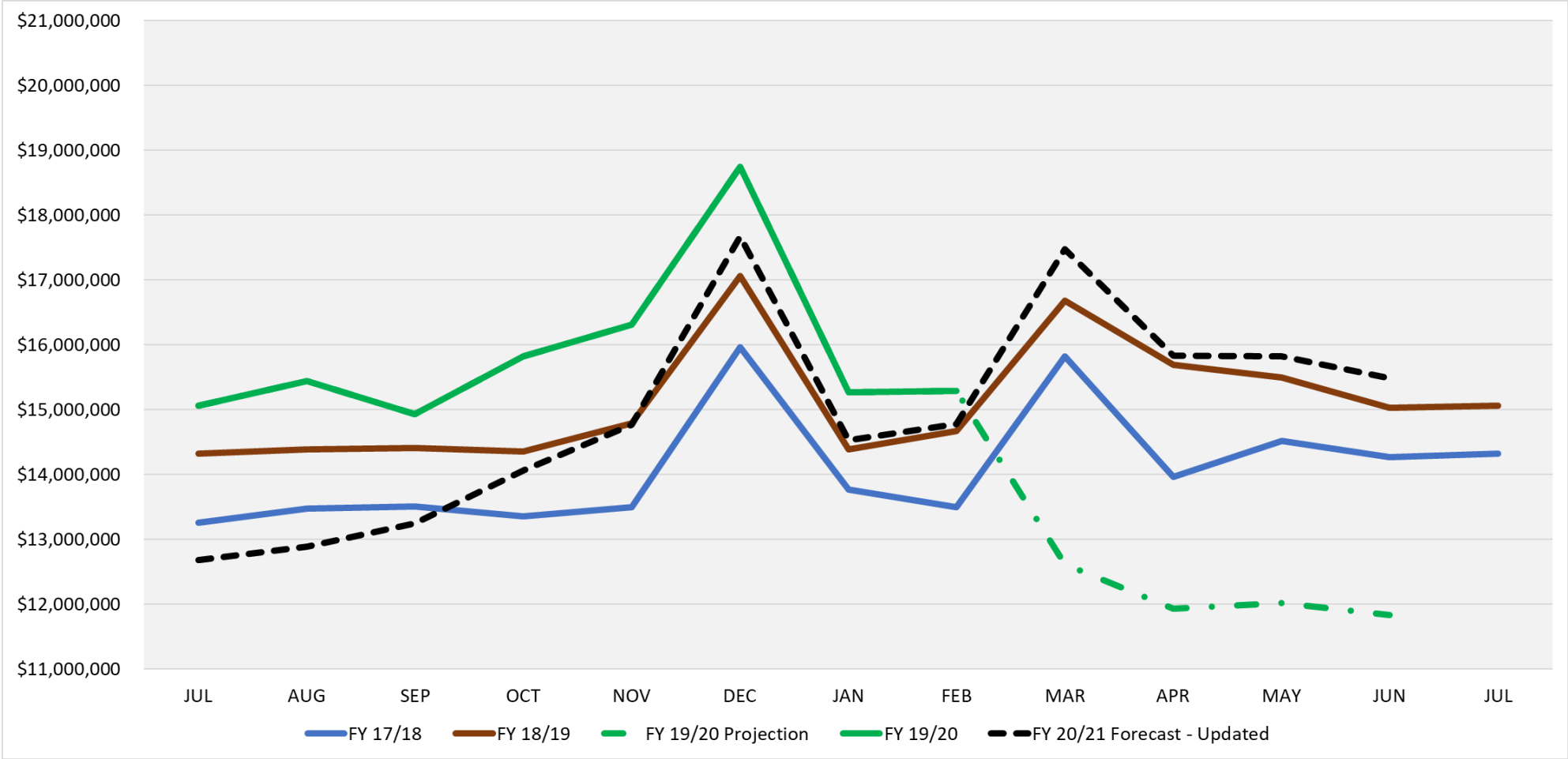
Short-Term Forecast

Example: City Sales Tax

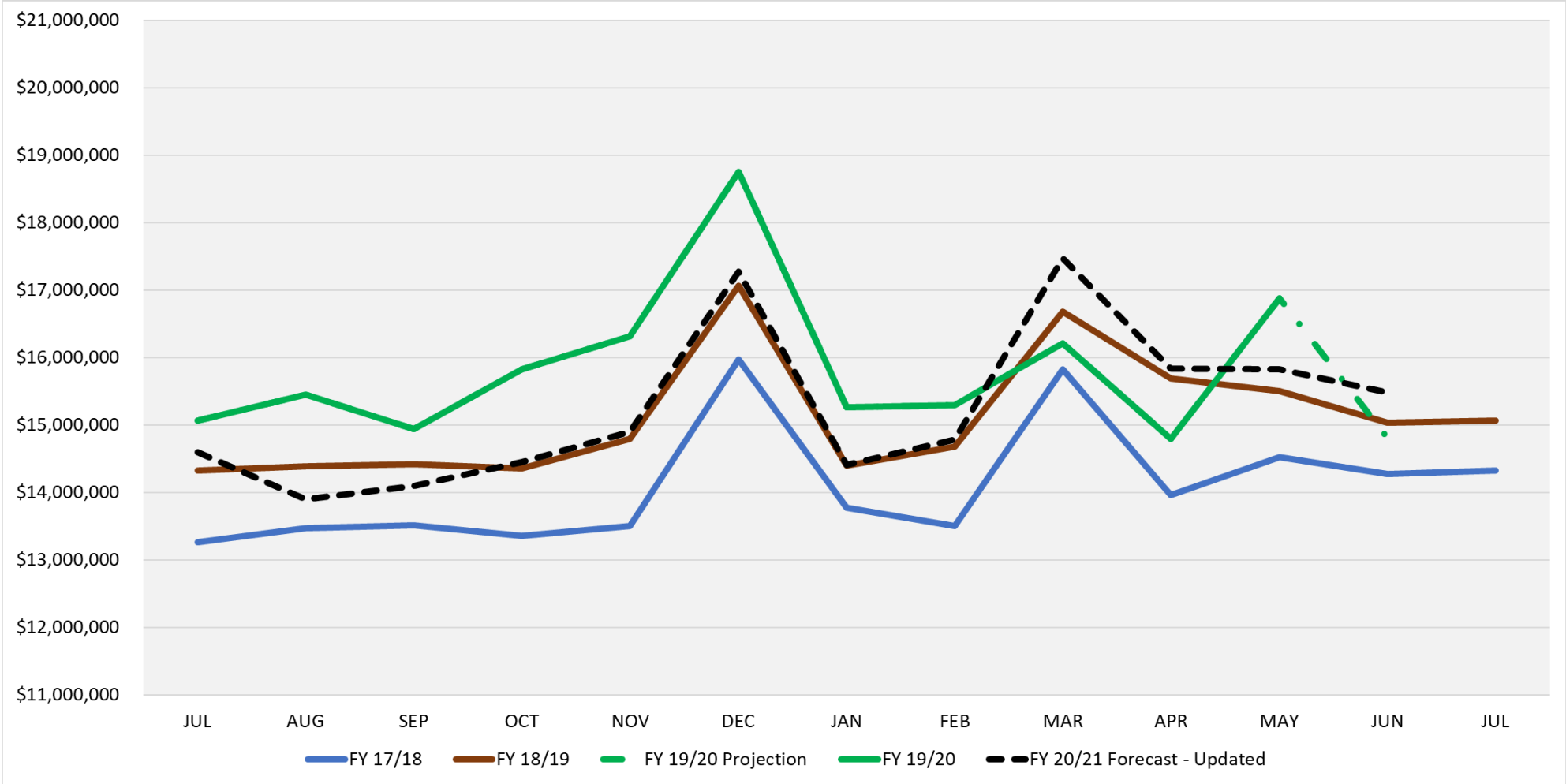


Short-Term Forecast Updates: FY 20/21 City Sales Tax

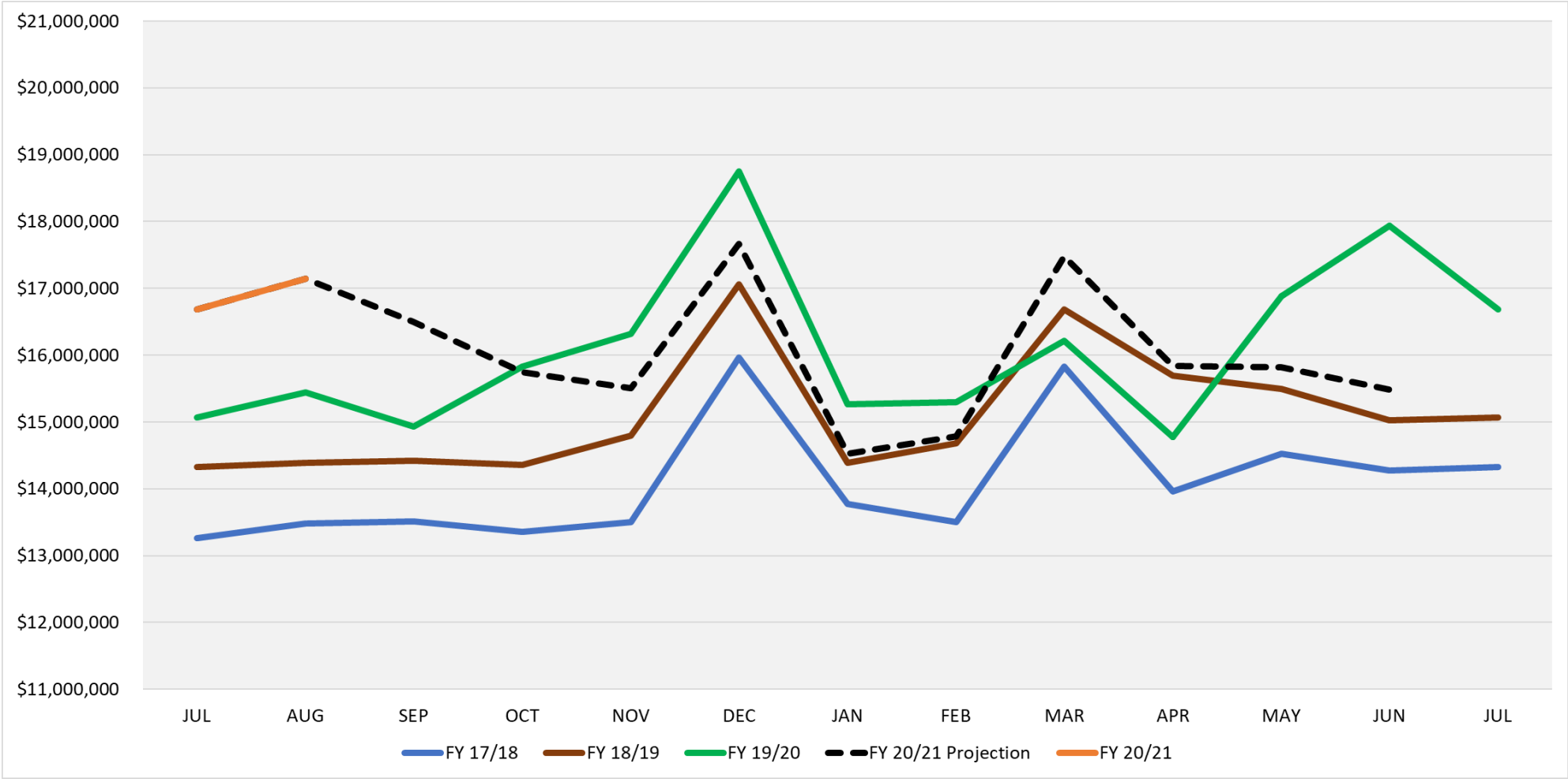
April 2020



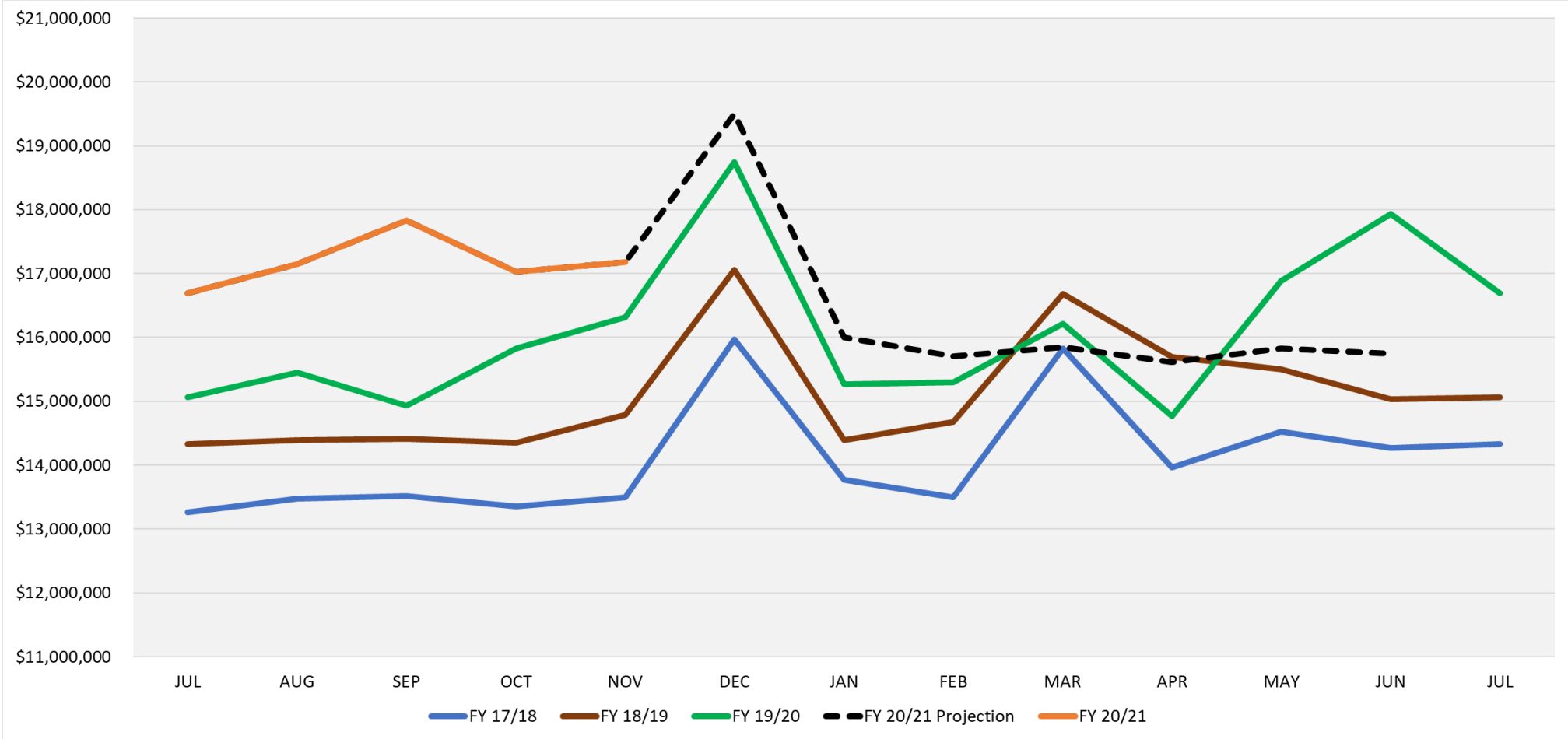
Short-Term Forecast Updates: FY 20/21 City Sales Tax July 2020



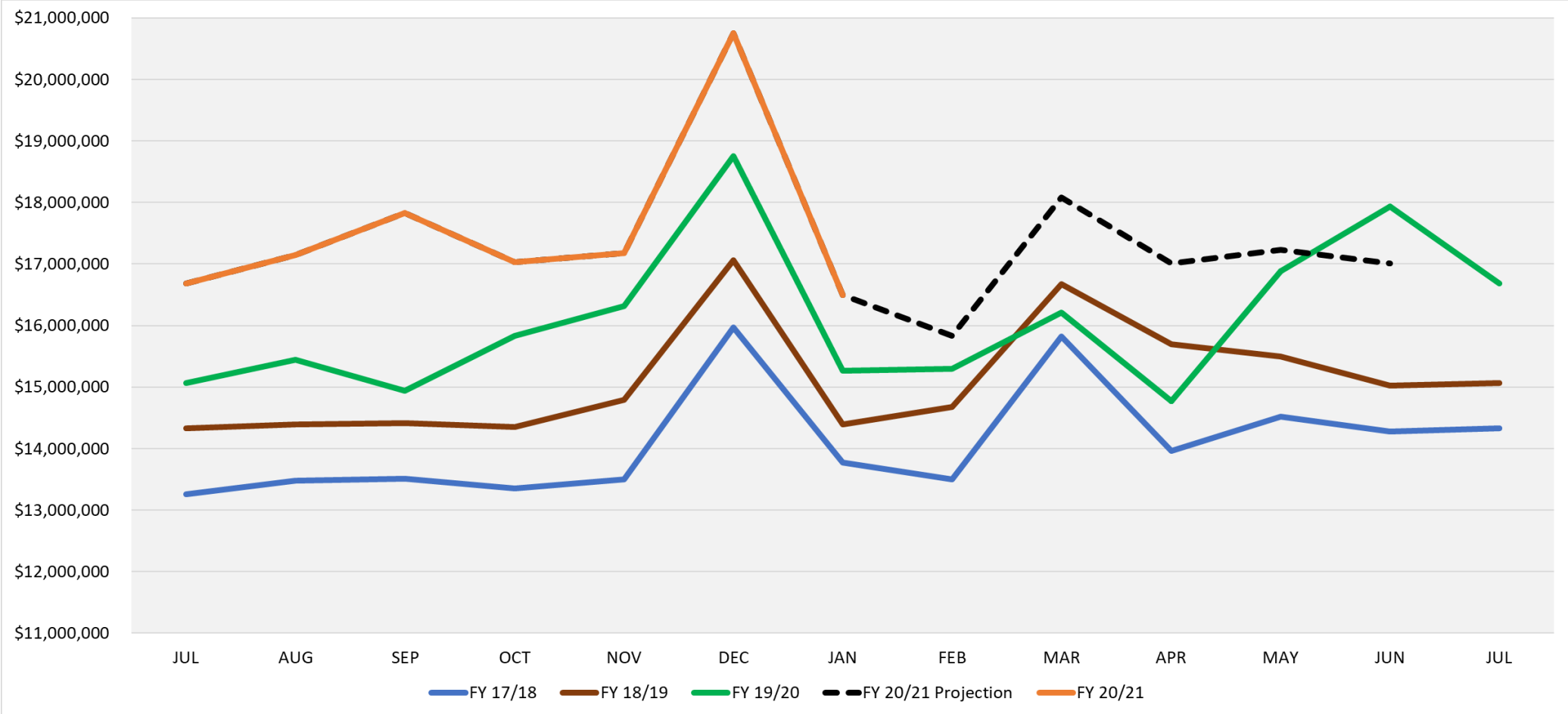
Short-Term Forecast Updates: FY 20/21 City Sales Tax October 2020



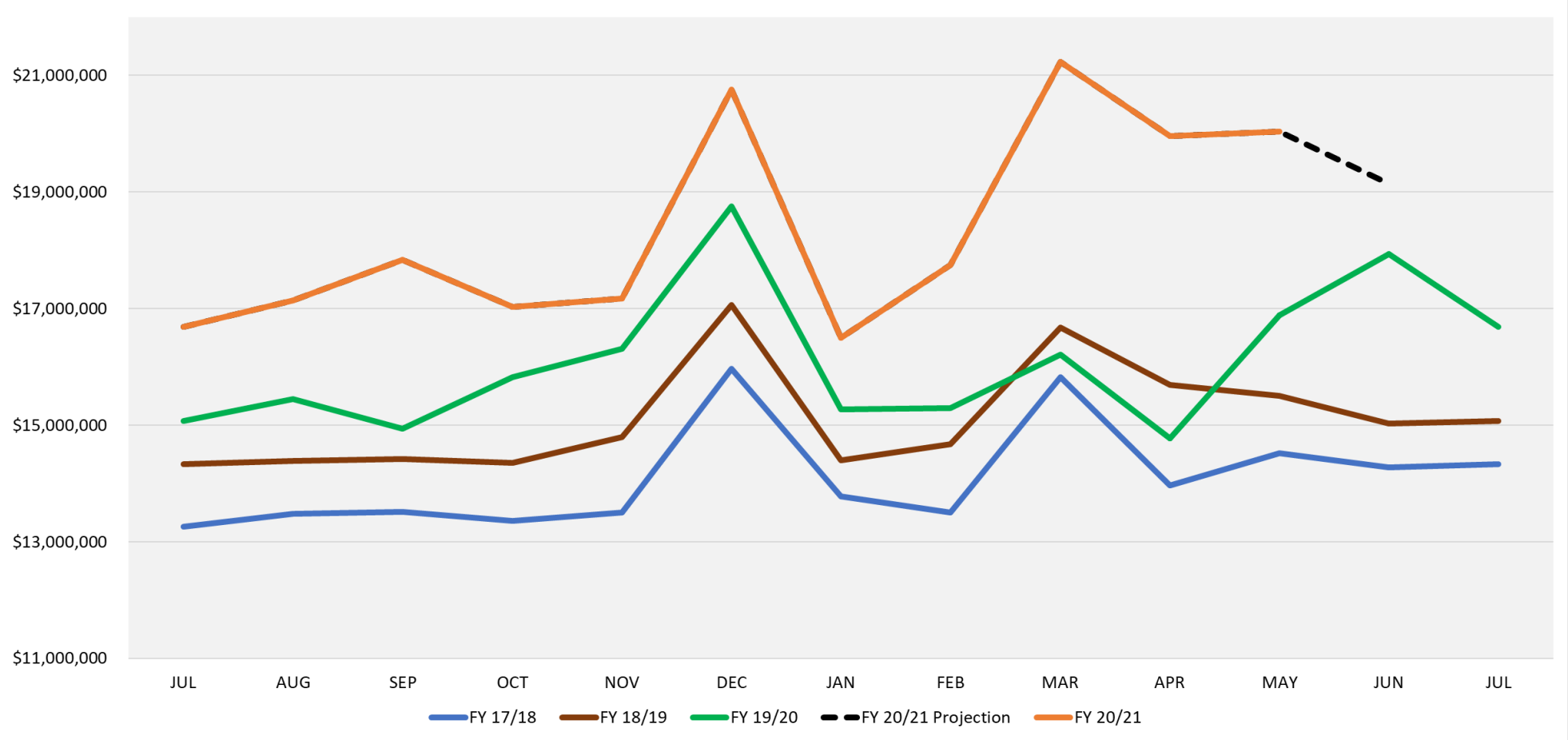
Short-Term Forecast Updates: FY 20/21 City Sales Tax January 2021



Short-Term Forecast Updates: FY 20/21 City Sales Tax April 2021



Short-Term Forecast Updates: FY 20/21 City Sales Tax July 2021



Importance of Frequent Updates to Short-Term Forecasts

Adopted Budget FY 20/21	Actuals FY 20/21	Difference FY 20/21
\$ 78,972,000	\$ 126,517,000	\$ 47,545,000
\$ 472,722,000	\$ 532,258,000	\$ 59,536,000
\$ 483,822,000	\$ 455,628,000	\$ (28,194,000)
\$ (11,100,000)	\$ 76,630,000	\$ 87,730,000
\$ 67,872,000	\$ 203,147,000	\$ 135,275,000

Long-Term Forecast

Example: Local Streets Fund & HURF

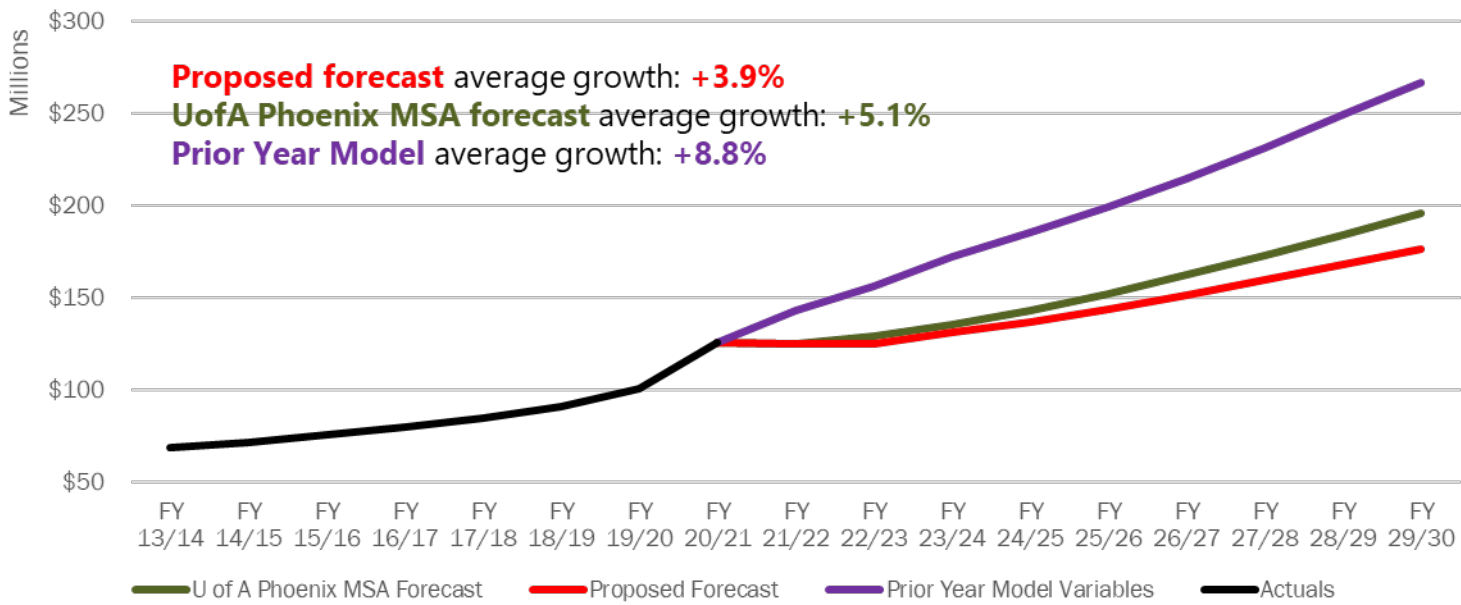
	FY 20/21 Year End Actuals	FY 21/22 Year End	FY 22/23 Budget	FY 23/24 Forecast	FY 24/25 Forecast	FY 25/26 Forecast	FY 26/27 Forecast	FY 27/28 Forecast	FY 28/29 Forecast
Estimated Beginning Fund Balance	\$62,520,827	\$79,649,571	\$79,555,143	\$72,767,522	\$55,586,868	\$27,307,345	\$20,441,942	\$15,977,713	\$15,595,824
Revenues									
Local Streets Fund	\$41,018,145	\$44,194,650	\$43,360,588	\$39,355,872	\$39,976,844	\$41,976,692	\$43,899,318	\$45,763,824	\$47,636,661
Highway User Revenue Fund	\$45,495,832	\$45,950,000	\$46,845,653	\$42,882,072	\$43,371,165	\$43,841,402	\$44,300,447	\$44,700,562	\$45,043,204
Total Revenues	\$86,513,977	\$90,144,650	\$90,206,241	\$82,237,944	\$83,348,009	\$85,818,094	\$88,199,765	\$90,464,386	\$92,679,865
Appropriations/Expenses									
Operating Expenses									
Total Operating Costs	\$43,393,269	\$48,187,338	\$54,774,001	\$55,798,306	\$57,577,014	\$59,093,411	\$60,437,946	\$62,005,630	\$63,826,568
Project Costs	\$13,520,158	\$29,662,077	\$30,407,448	\$31,818,504	\$42,385,368	\$29,491,136	\$28,164,848	\$28,840,646	\$29,551,336
HURF Debt Service Fund Transfer	\$12,471,805	\$12,389,663	\$11,812,413	\$11,801,788	\$11,665,150	\$4,098,950	\$4,061,200	\$ -	\$ -
Total Expenses	\$69,385,233	\$90,239,078	\$96,993,862	\$99,418,598	\$111,627,532	\$92,683,497	\$92,663,994	\$90,846,276	\$93,377,903
Net Uses and Sources	\$17,128,744	(\$94,428)	(\$6,787,621)	(\$17,180,654)	(\$28,279,523)	(\$6,865,403)	(\$4,464,229)	(\$381,889)	(\$698,038)
Estimated Ending Fund Balance	\$79,649,571	\$79,555,143	\$72,767,522	\$55,586,868	\$27,307,345	\$20,441,942	\$15,977,713	\$15,595,824	\$14,897,785

SIMPLE WAYS TO IMPROVE FORECASTS

Review of Historic Growth Rates for Long-Term Forecasts

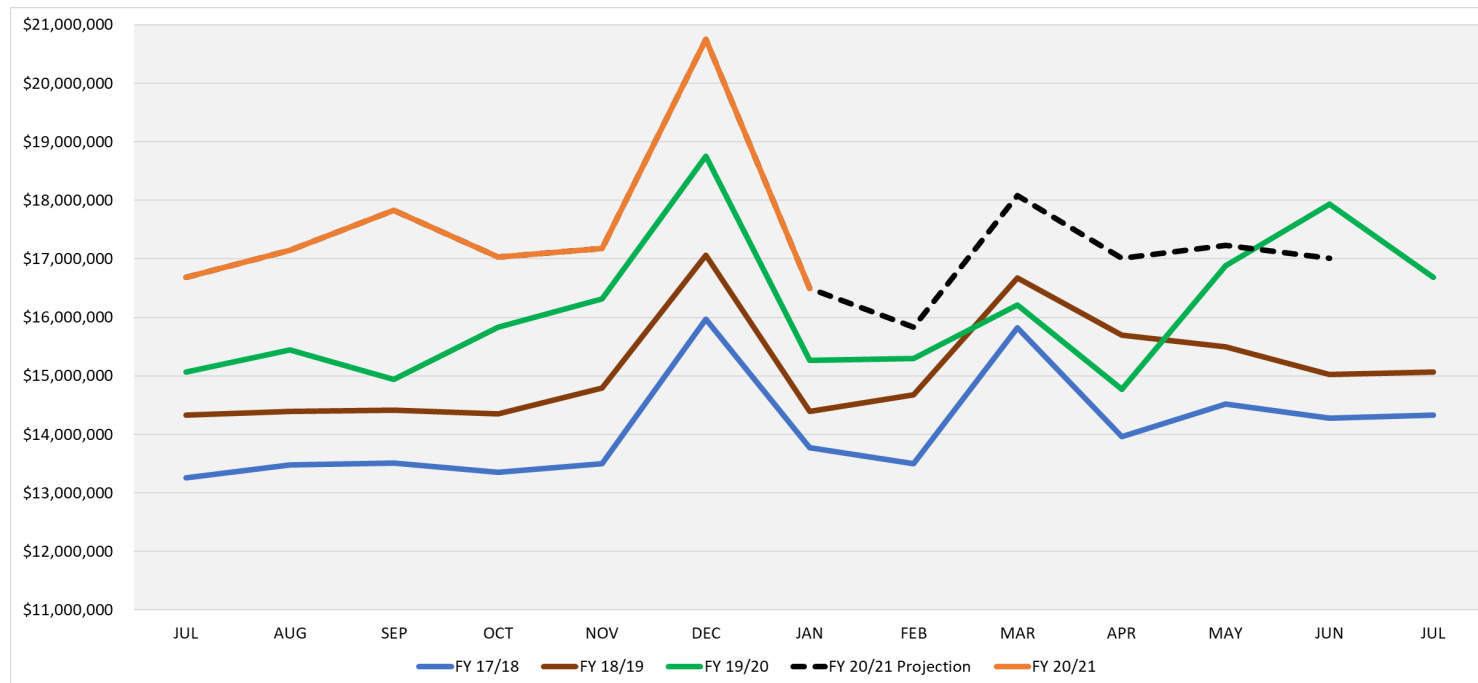
- Knowing historic growth rates for major revenue sources can place parameters around long-term forecast expectations
- Example: City Sales Tax – Retail Category average annual growth

- 5-year: +10.8%
- 10-year: +7.7%
- 15-year: +2.9%
- 20-year: +3.8%



Using Monthly Charts to Improve Short-Term Forecasts

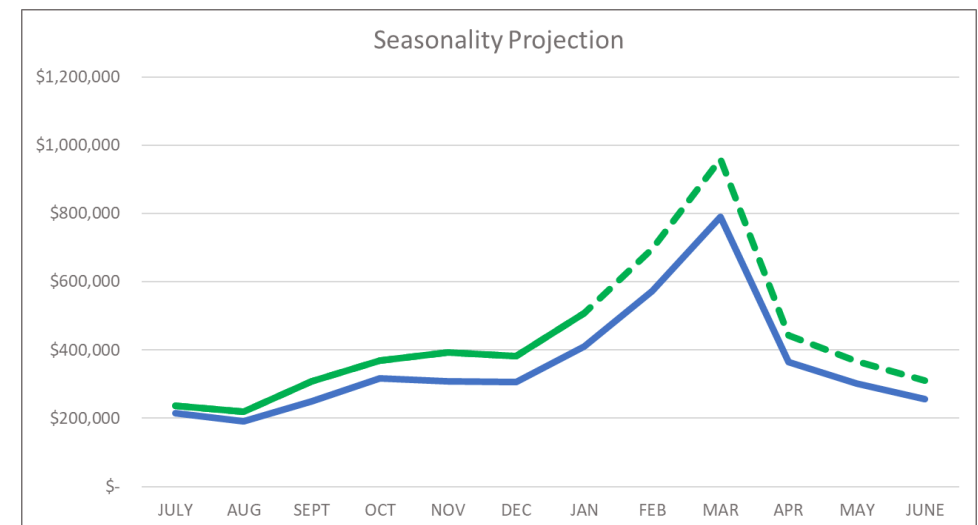
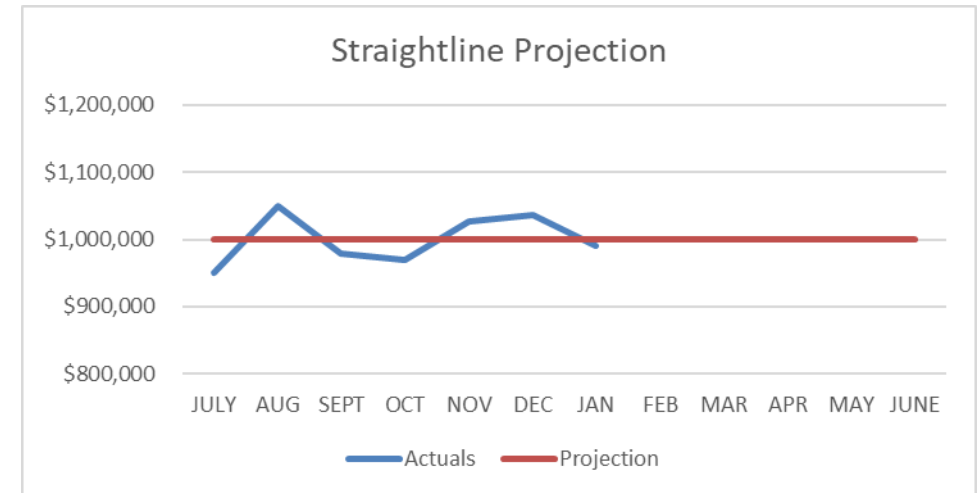
- Review of short-term forecast by plotting the projection on a chart may be beneficial compared to reviewing annual data



Straightline and Seasonality Projections

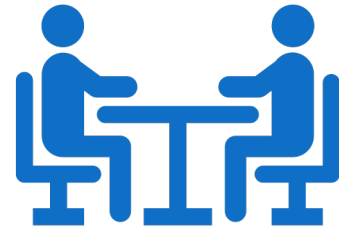
- A Straightline projection assumes the average monthly revenue for the rest of the fiscal year
 - *Good approach for revenues that are consistent each month*

- A seasonality projection assumes the year-to-date growth rate above the prior year will continue for the rest of the fiscal year
 - *Good approach for revenues that peak quarterly, semi-annually or annually*



REPORTS & PROCESSES

How to communicate the forecasts?



Establish regular on-going processes for reporting revenues and financial forecasts



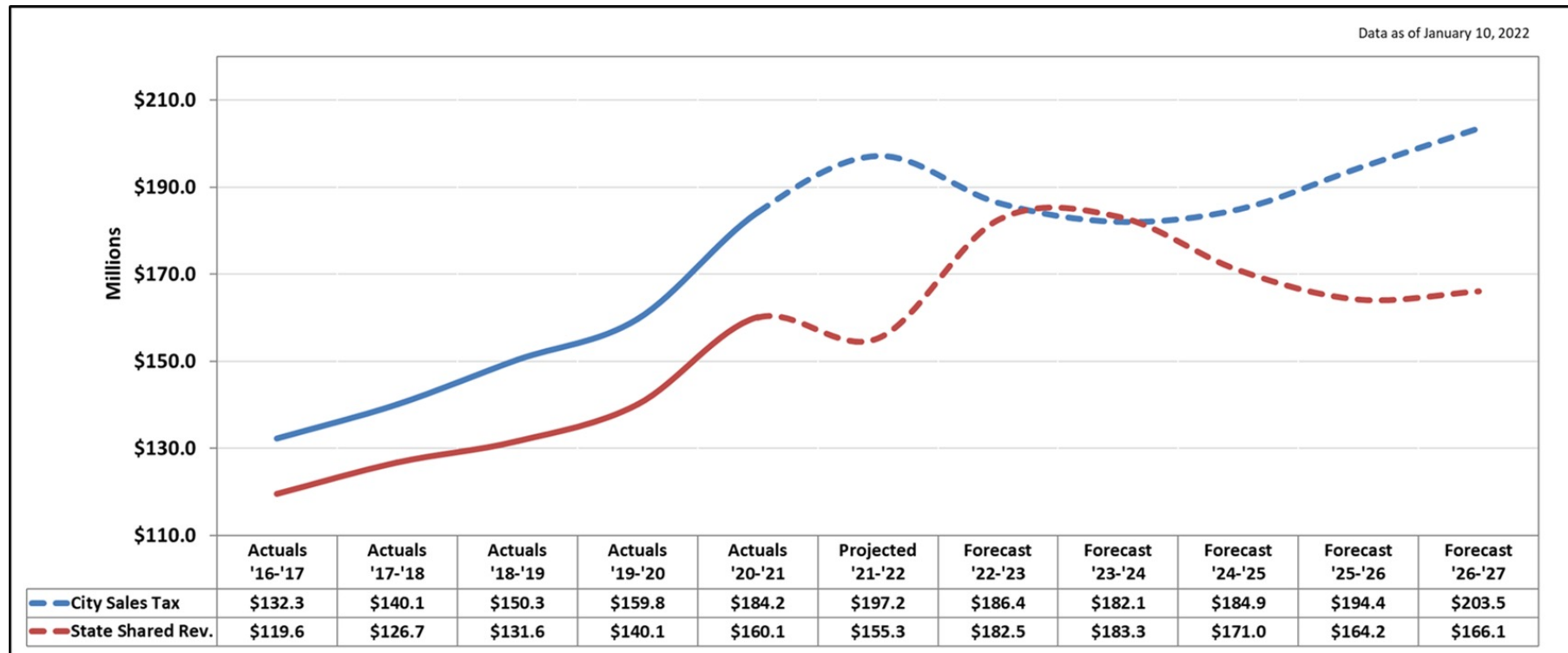
Connect forecasts to your public purpose and desired outcomes

General Governmental Fund Balance Table

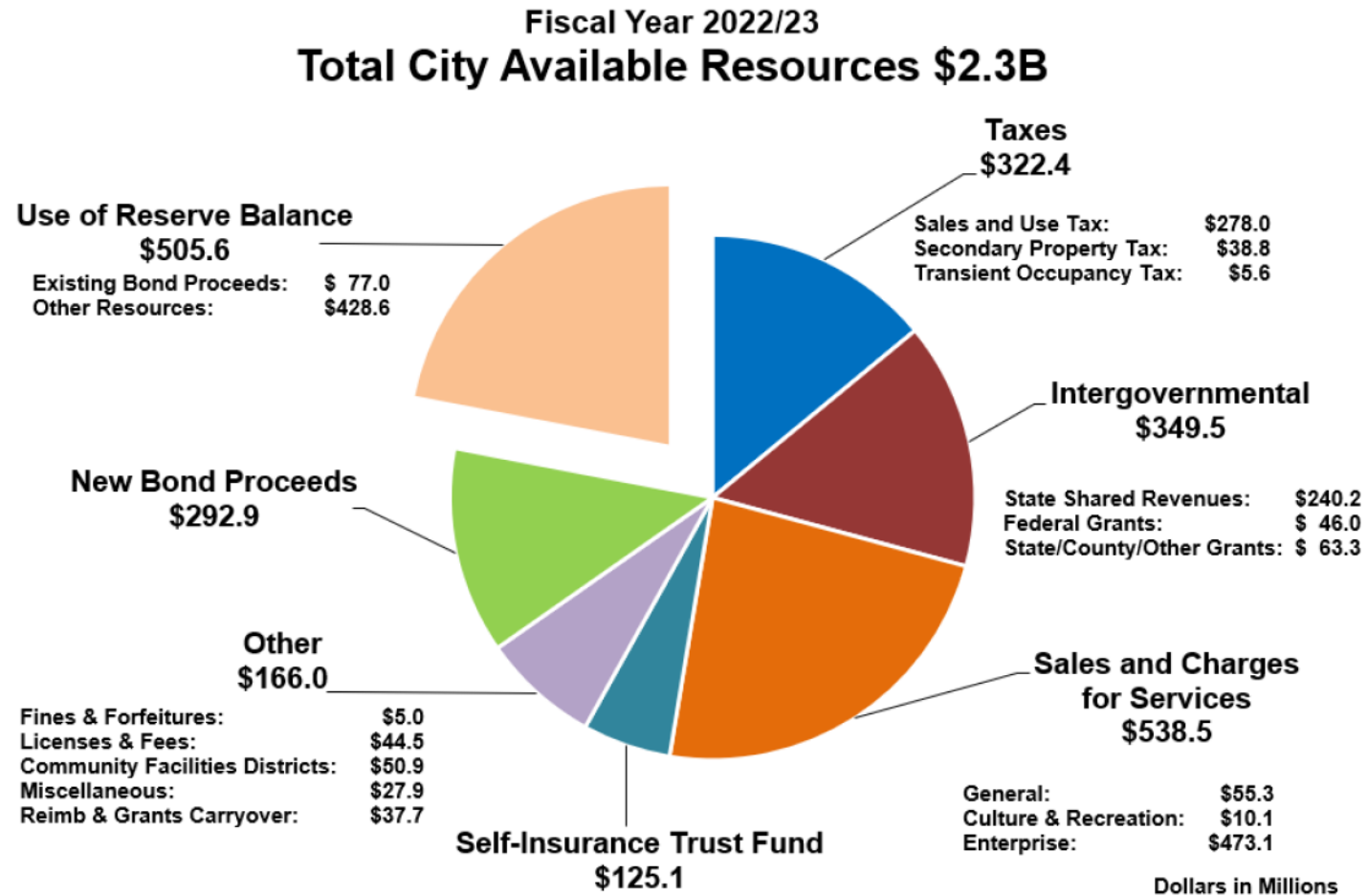
City of Mesa
 General Governmental Funds
 FY 2022/23 Budget
 (updated as of 5/10/2022)

	Projected FY 21/22	Budget FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26	Forecast FY 26/27
Beginning Reserve Balance	\$203.1	\$164.4	\$160.4	\$163.9	\$130.6	\$112.2
Total Sources	\$564.8	\$587.2	\$562.8	\$555.7	\$567.2	\$586.4
Total Uses	\$603.5	\$591.2	\$559.4	\$589.0	\$585.6	\$610.1
Net Sources and Uses	(\$38.7)	(\$4.0)	\$3.5	(\$33.3)	(\$18.4)	(\$23.8)
Ending Reserve Balance	\$164.4	\$160.4	\$163.9	\$130.6	\$112.2	\$88.4
Ending Reserve Balance Percent*	27.8%	28.7%	27.8%	22.3%	18.4%	14.6%
Dollars in Millions						
*As a % of all Next Year's uses of funding						
Note: Includes economic recession beginning FY 23/24						
data as of May 2022						

General Governmental Revenue Forecast



Pie Charts for Adopted Budget



Processes that will improve Forecasting

- Review year to date actuals throughout the year
 - *Review short-term forecast updates and discuss potential long-term updates*
- Create a schedule or timeline of when forecast updates will be made
- Example: City of Mesa
 - *August: Update major revenues forecast*
 - *September: Present forecast to Budget Department Management*
 - *December/January: Present forecasts to the City Manager's Office*
 - *February: Present forecasts and economic conditions to the City Council*
 - *May: Adopt Budget by City Council*

CONCLUSION

Conclusion

- Make forecasts relevant to decision processes
- Monitor and update forecasts regularly
- Present forecast in an easy-to-understand fashion





QUESTIONS?



THANK YOU!