STATE OF CALIFORNIA | DEBT AFFORDABILITY REPORT | OCTOBER 2020

stead·fast: *adjective*

resolutely or dutifully
firm and unwavering

FIONA MA, CPA | CALIFORNIA STATE TREASURER

Fiona Ma, CPA
Treasurer
State of California

October 1, 2020

Dear friends,

This has been a year like no other. The tragic pandemic has taken so many lives and has thrown the economy into a recession, caused massive unemployment, triggered state and local budget shortfalls, and created volatility in both the equity and debt markets. It has also changed the way we socialize and work, possibly for good.

Yet through it all, the work of my office, serving as California's state banker, has not missed a beat. In the face of enormous uncertainty, the dedicated staff at the California Treasurer's office has shown its continued commitment to the highest principles and practices of managing the state's debt.

In fiscal year 2019-20, the state took advantage of falling interest rates to save taxpayers $1.6 billion (in present value terms) or $1.9 billion over the life of the bonds, by issuing $4.4 billion in general obligation bonds to refinance older debt issued at higher interest rates. Those bonds were part of a total of $7.8 billion of general obligation bonds issued by the state during fiscal year 2019-20.

Prudent actions taken by the voters, the current and prior governors, and the state Legislature over the last decade have equipped our state to deal far better with our current fiscal challenges than we have been able to in the past. These actions, which began in 2011, include implementing structural reforms, passing on-time balanced budgets and putting a priority on eliminating budgetary gimmicks that functioned as commitments against future resources. One of the most important reforms was the approval by voters of Proposition 2, the Rainy Day Budget Stabilization Fund Act in November 2014.

The measure altered the state's existing requirements for the Budget Stabilization Account ("BSA") as established by Proposition 58. The BSA is a rainy day fund. A companion measure also established a Public School System Stabilization Account, which serves as a buffer to catastrophic losses of revenues for one of our most critical missions—the education of our school children to enable them to compete in an increasingly demanding economy.

Proposition 2 requires the state to make: (1) minimum annual payments toward certain eligible debts (until 2029-30) and (2) deposits into the state's rainy day fund. First, it requires the state to put aside 1.5 percent of General Fund revenues. Second, it requires the state to put aside a portion of capital gains revenues that exceed a specified threshold. The state combines these two amounts and allocates half of that total to pay down debts and the other half to build the rainy day reserve.

These combined actions helped California improve and maintain strong ratings on its general obligation bonds. In August 2019, Fitch Ratings upgraded the state's general obligation long-term bond rating from "AA-" to "AA"; and, in October 2019, Moody's Investors Service upgraded the state's general obligation long-term bond rating from "Aa3" to "Aa2."

The state's rainy day fund has proven especially meaningful. Because governmental revenues naturally fall faster than expenditures, the COVID-19-induced economic stress was significantly less threatening to the state because of the existence and size of the state's rainy day funds.

I encourage you to review carefully the data contained in this annual debt affordability report. California's data is presented in ways that compare and contrast key indicators of our debt position with peer governments, the degree to which our debt burden lays claims to our state's economic resources, and the share of the state's general fund receipts dedicated to repayment of our debt.

We know this next year will be filled with uncertainty about our health, our community and our economy. All Californians should be assured that my office remains steadfast in our efforts to manage our state's debt and credit in a way that benefits all Californians.

In Peace and Friendship,

FIONA MA, CPA
California State Treasurer

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PREFACE

Government Code Section 12330 requires the State Treasurer to submit an annual Debt Affordability Report (DAR) to the Governor and Legislature. The report must provide the following information:

- A listing of authorized but unissued debt the Treasurer intends to sell during the current year (2020-21) and the following year (2021-22), and the projected increase in debt service as a result of those sales.
- A description of the market for state bonds.
- An analysis of state bonds' credit ratings.
- A listing of outstanding debt supported by the General Fund and a schedule of debt service requirements for the debt.
- A listing of authorized but unissued bonds that would be supported by the General Fund.
- Identification of pertinent debt ratios, such as debt service to General Fund revenues, debt to personal income, debt to estimated full value of property and debt per capita.
- A comparison of the pertinent debt ratios for the state with those of the 10 most populous states.
- The percentage of the state's outstanding general obligation (GO) bonds comprised of fixed rate bonds, variable rate bonds, bonds that have an effective fixed interest rate through a hedging contract and bonds that have an effective variable interest rate through a hedging contract.
- A description of any hedging contract, the outstanding face value, the effective date, the expiration date, the name and ratings of the counterparty, the rate or floating index paid by the counterparty, and an assessment of how the contract met its objectives.

NOTES ON TERMINOLOGY

- This report frequently uses the words "bonds" and "debt" interchangeably, even when the underlying obligation behind the bonds does not constitute debt subject to limitation under California's constitution. This conforms to the municipal market convention that applies the terms "debt" and "debt service" to a wide variety of instruments, regardless of their precise legal status.
- The report references fiscal years without using the term "fiscal year" or "fiscal." For example, 2020-21 means the 2020-21 fiscal year ending June 30, 2021.

SECTION 1 | MARKET FOR STATE BONDS

The state is one of the largest issuers in the $3.9 trillion U.S. municipal bond market. Over the last five fiscal years, the state has issued an average of $7.9 billion of General Obligation (GO) bonds annually. In 2019-20, the state issued $7.8 billion of GO bonds. Of that total, $4.4 billion refinanced outstanding GO bonds to produce debt service savings.

The market and price for the state's bonds are affected by factors specific to the state as well as overall conditions in the debt capital markets. These factors include significant global events, the economy, general market interest rates, national and state personal income tax rates, the supply of and demand for municipal bonds, investor perception of the state's credit and the performance of alternative investments, such as equities or other debt capital.

Since the last Debt Affordability Report (DAR) was published in October 2019, the municipal bond market has been dramatically impacted by the COVID-19 global pandemic, investors' outlook on the U.S. and global economies, geopolitical and international trade tensions, and changes in Federal Reserve policy. In response to these events, short-term and long-term tax-exempt interest rates have generally declined, following a period of extreme volatility in March 2020.

STATE-SPECIFIC FACTORS

The state has been significantly impacted by the health-related and economic impacts of the COVID-19 global pandemic. Efforts to respond to and mitigate the spread of COVID-19 have had a severe impact on the state and national economy, triggered a historic drop and volatility in the stock market, and ended the longest economic expansion in U.S. history officially putting the U.S. into a recession. In addition, the state has had to address budgetary shortfalls resulting from the pandemic's effect on economic activity, resulting in both lower revenues as well as higher expenditures. Because of the prudent actions undertaken by voters, the current and prior Governors, and the State Legislature over the last decade, the state was in a better fiscal position to face these challenges than it would have been otherwise. Since 2011, the state has instituted revenue initiatives and expenditure controls, adopted on-time budgets, implemented structural reforms, demonstrated a commitment to paying down past borrowings and deferrals and built its reserves. At the end of 2019-20, the state's combined reserves totaled $16.1 billion. The availability of these accumulated reserves, along with other budget solutions, has helped the state address the 2020-21 budget deficit caused by the projected decline in revenues because of the pandemic.

Despite the challenges described above, the ratings on the state's GO bonds have improved and remained steady. In August 2019, Fitch Ratings (Fitch) upgraded the state's GO long-term bond rating from "AA-" to "AA" and in October 2019, Moody's Investors Service (Moody's) upgraded the state's GO long-term bond rating from "Aa3" to "Aa2." The ratings from Moody's, S&P Global Ratings (S&P) and Fitch have remained unchanged since then.

Similarly, the state's credit spreads have remained steady following some brief volatility in March 2020. Credit spreads represent the difference in yield between two bonds of similar maturity but different credit quality. Figure 1 depicts the state's interest rate spreads to the AAA GO Municipal Market Data (MMD) index, the municipal industry's benchmark of AAA-rated state GO bonds. The state's credit spread on its 30-year bonds to the MMD benchmark has

FIGURE 1

30-YEAR CALIFORNIA MMD CREDIT SPREADS TO "AAA" MMD

Source: Thomson Municipal Market Monitor (TM3)

tightened from a high of more than 150 basis points at the end of 2009 to a low of four basis points in September 2018 and was seven basis points as of June 2020.

The challenges due to the COVID-19 pandemic are significant and are projected to continue to affect the fiscal health of the state over the next few years. In addition, the state faces other risks with potentially significant General Fund impacts. These risks include, among other things, the cost of public employee retirement benefits, the impact of global relations and federal trade negotiations and/or policies, changes to federal policies on health care, immigration and the environment, federal tax law changes, housing constraints, impacts of climate change, and cybersecurity risks.

OVERALL MARKET CONDITIONS

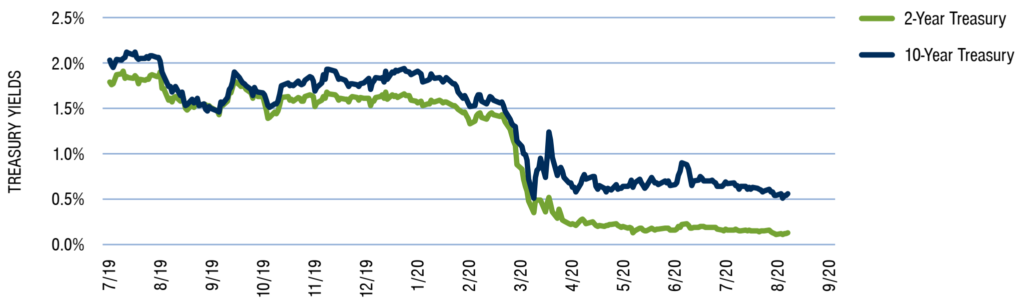
The discussion below begins with a review of the factors that impacted the larger U.S. bond market over the last fiscal year that also significantly affected the market for the state's bonds. For the first eight months of 2019-20, the U.S. bond market reacted strongly to the weakening outlook for the global and domestic economies due to rising geopolitical and international trade tensions and later to changes in the Federal Reserve Board's monetary policy. Starting in early March, as COVID-19 was declared a global pandemic, concerns about its effects and actions by governments to combat the pandemic and its economic outfall became the primary drivers of market conditions. Over the last few months, actions taken by the federal government as well as Federal Reserve Board have helped to stabilize the U.S. bond market and return investor confidence.

INVERSION OF THE YIELD CURVE. A yield curve is the set of interest rates for fixed income assets at a set point in time for bonds having equal credit quality but different maturity dates. A yield curve that is positively sloped–that is, with long-term rates higher than short-term rates—is referred to as a "normal" yield curve. When short-term rates are higher than long-term rates, the yield curve is said to be "inverted." During the first half of 2019-20, the shape of the yield curve shifted as Federal Reserve monetary policy and the market's outlook on the U.S. economy evolved. The yield curve started 2019-20 relatively "flat" (that is, the difference between short- and long-term interest rates was small) and eventually inverted in late August 2019. As shown in Figure 2, the yields of 2- and 10-year Treasuries crossed in August with many economists citing the inverted yield curve as a historically reliable indicator of an oncoming recession. In September 2019, the Federal Reserve cut its Federal Funds rate for the second time in seven weeks in response to concerns about an economic slowdown. The yield curve has not inverted again since then, but it continued to be relatively flat until the Federal Reserve took stronger action in the form of an "emergency" rate cut in mid-March 2020 as a result of COVID-19. The yield curve is now normal with some steepness.

IMPACT OF COVID-19. The impact of the COVID-19 pandemic on U.S. bond markets arose strongly and suddenly beginning in late February 2020. The declines in the U.S. capital markets started with equities, then spread to bonds with lower credit ratings, and ultimately to bonds with higher credit ratings, like the state's GO bonds. In particular, investor support of the municipal bond market fell sharply as investors became concerned about the potential decline in state and

FIGURE 2

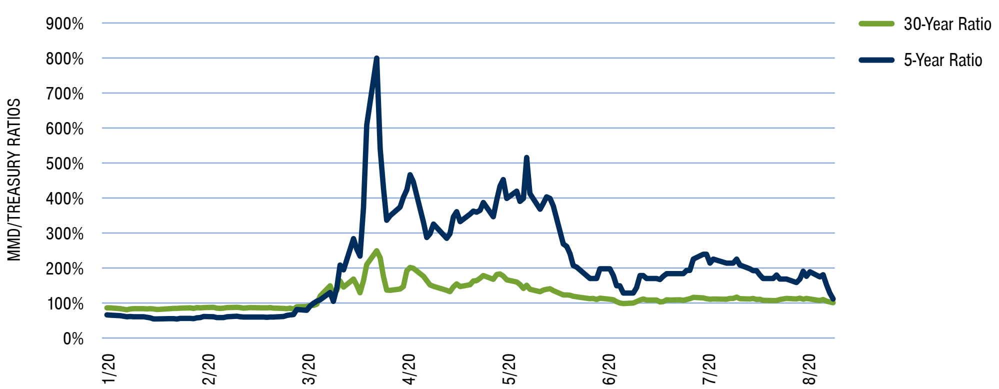
TRENDS OF 2- AND 10-YEAR TREASURY YIELDS



Source: Thomson Municipal Market Monitor (TM3)

FIGURE 3

TRENDS OF 5- AND 30-YEAR MMD/TREASURY RATIOS



Source: Thomson Municipal Market Monitor (TM3)

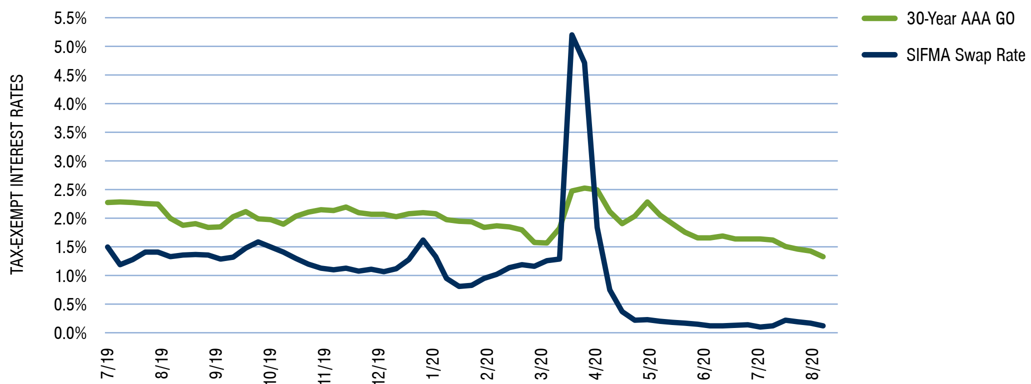
local government revenues due to the sudden drop in economic activity. Figure 3 shows the ratios of 5- and 30-year tax-exempt interest rates as measured by the AAA GO MMD to U.S. Treasury yields of the corresponding tenor. Comparing the ratios of tax exempt municipal bonds to U.S. Treasury yields is a common metric investors use to determine relative value. Historically, these ratios have been near or below 100 percent reflecting the tax advantage of the interest income on tax-exempt bonds but offset by the stronger creditworthiness of U.S. Treasuries. As shown in Figure 3, 5- and 30-year ratios had been approximately 65 percent and 90 percent, respectively in January through mid-February and climbed to as much as 800 percent and 250 percent in mid-March, before declining. As of the end of June 2020, the 5- and 30-year ratios had fallen substantially to approximately 240 percent and 115 percent respectively, and they have continued to decline in the last few months to pre-COVID-19 levels.

INTEREST RATE TRENDS. Overall, both short and long-term tax-exempt interest rates declined throughout 2019-20, except for the brief period of market dislocation in spring 2020. As shown in Figure 4, from July 2019 through June 2020, long-term tax-exempt interest rates, as measured by the 30-year MMD index, declined by 64 basis points from 2.27 percent to 1.63 percent. Meanwhile, the short-term tax-exempt interest rates, as measured by the Securities Industry and Financial Markets Association (SIFMA) swap index, also declined by 136 basis points from 1.49 percent to 0.13 percent.

Figure 5 shows the change in 1- to 30-year tax-exempt rates from the beginning to the end of 2019-20. Overall, these rates declined by between 68 and 99 basis points, marking 2019-20 as one of the largest one year change in these rates for the MMD indices' 30-year history.

FIGURE 4

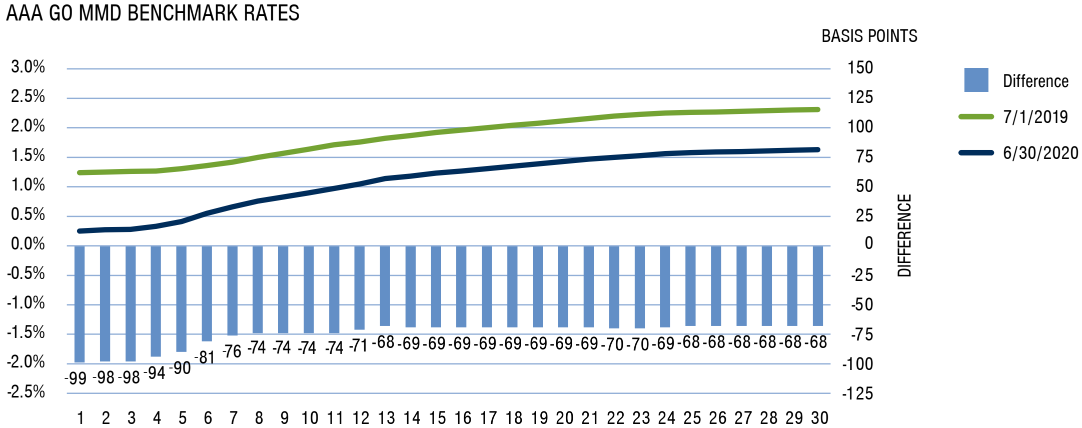
TRENDS OF TAX-EXEMPT INTEREST RATES



Source: Thomson Municipal Market Monitor (TM3)

FIGURE 5

AAA GO MMD BENCHMARK RATES



Source: Thomson Municipal Market Monitor (TM3)

SUPPLY AND DEMAND

Technical factors such as supply and demand for municipal bonds also affect the pricing of municipal bonds.

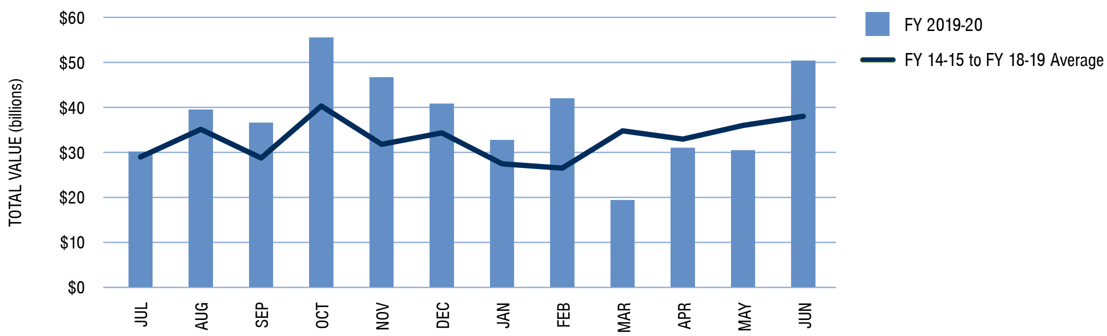
SUPPLY. The supply of municipal bond issuance, including both tax-exempt and taxable bonds in 2019-20 followed the historical month-by-month cyclical pattern, although volume in March was significantly lower, as many municipalities deferred their transactions in response to the market dislocation previously discussed. Figure 6 compares the monthly primary market issuance volume of municipal bonds for 2019-20 to the five year historic average for the prior five fiscal years.

Despite the lower volume in March, overall issuance volume for 2019-20 was high in comparison to prior years. This is especially noticeable when compared to 2018-19, which was a relatively low volume year. Figure 7 shows that 2018-19 had a lower than usual level of refunding activity as it was the first full fiscal year in which the prohibition of tax-exempt advance refundings enacted in the Tax Cuts and Jobs Act of 2017 applied.

The increased issuance volume for 2019-20 is the result of higher taxable bond issuance activity, as issuers utilized taxable advance refundings with more frequency as interest rates fell. Figure 8 shows this increase in volume for 2019-20. Overall, total issuance volume for 2019-20 was 31 percent higher than in 2018-19 but only 10 percent higher when comparing tax-exempt issuance volume year over year. Similarly, total 2019-20 volume was 11 percent higher

FIGURE 6

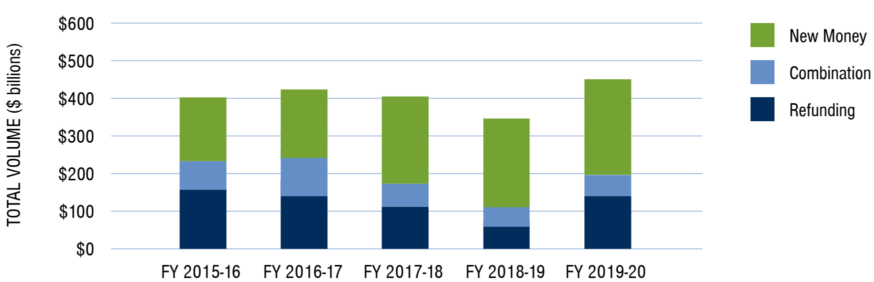
MONTHLY U.S. MUNICIPAL BOND VOLUME, FY 2019-20 VS. HISTORIC 5-YEAR AVERAGE



Source: The Bond Buyer

FIGURE 7

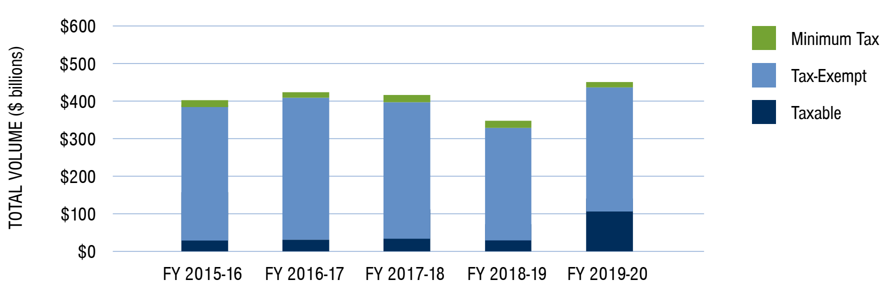
U.S. MUNICIPAL BOND ISSUANCE VOLUME BY PURPOSE



Source: The Bond Buyer

FIGURE 8

U.S. MUNICIPAL BOND ISSUANCE VOLUME BY TAX STATUS



Source: The Bond Buyer

than the average of the three fiscal years from 2015-16 to 2017-18, but tax-exempt volume was actually 10 percent lower than the average over this period.

DEMAND. Because of their tax advantage, tax-exempt bonds have a more limited universe of investors than taxable bonds. Municipal bond mutual funds represent a significant segment of the investor base for tax-exempt bonds, and these funds' inflows and outflows can materially impact investor demand. As shown in Figure 9, monthly inflows were positive for the first eight months of 2019-20, totaling more than $67.0 billion during this period. However, the trend reversed suddenly and sharply in March 2020, when there was more than $42.1 billion of outflows. The magnitude of these outflows was much larger than the net outflows in prior periods. This sudden shift in demand contributed to the dislocation in the municipal bond market, as bond funds liquidated significant holdings to meet investor redemptions. The outflows in March were followed by an additional $3.2 billion of outflows in April. Because of this significant drop in investor demand, many tax-exempt bond transactions were downsized or postponed in March and April. When issuers started to return to the market, they did so cautiously more sensitive to the size and structure of their transactions and primarily through the negotiated method of sale. In the last two months of 2019-20, monthly inflows returned to positive, larger transactions including both negotiated and competitive sales; with significantly more structuring flexibility were able to be sold successfully.

INTEREST RATES ON THE STATE'S BONDS

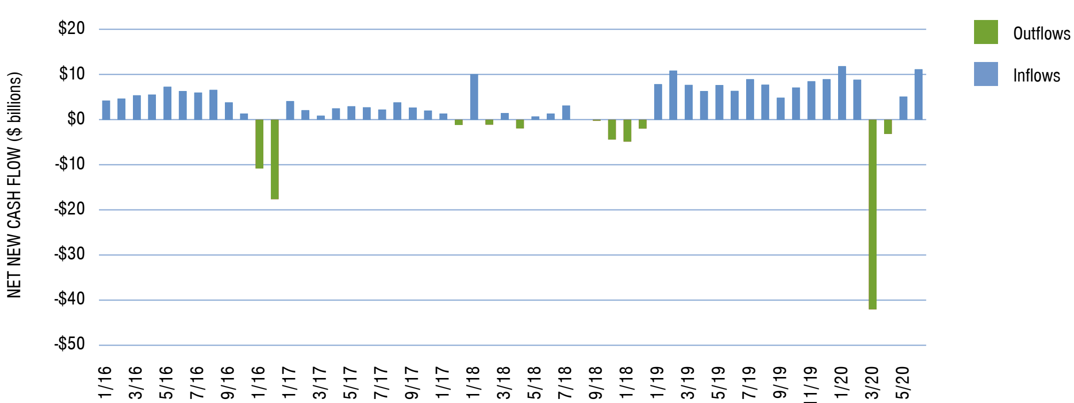
Interest rates on the state's bonds are the product of both state-specific factors and overall market conditions. With a stable and well-managed credit profile, the state has benefitted from the improvements in the general municipal bond market. As a result, the interest rates on the state's GO bonds are lower as of the end of 2019-20 than at the beginning of 2019-20. Figure 10 compares California GO MMD benchmark rates from the first business day of 2019-20 to those on the last business day of 2019-20. As shown, California GO MMD benchmark rates declined between 63 and 88 basis points over 2019-20. In addition, the 2019-20 rates are significantly better than the state's rates over most of the past decade—particularly for the longest maturities as shown in Figure 11.

With attractive long-term interest rates available throughout much of the fiscal year, the state was able to refinance $5.1 billion of its outstanding GO bonds in 2019-20 to reduce debt service costs. These refinancings generated approximately $1.9 billion of total debt service savings over the remaining life of the bonds (or approximately $1.6 billion on a present value basis).

In addition to fixed-rate GO bonds, the state has approximately $3.2 billion of variable rate GO bonds outstanding as of the end of 2019-20. Notwithstanding the market disruption in March, the state's variable rate GO bonds have been a source of low-cost financing for the state and have helped to diversify its capital structure. Historically, short-term tax-exempt interest rates have been lower than long-term tax-exempt interest rates. Additionally, as shown in Figure 12, the performance of these variable rate GO bonds in 2019-20 compares favorably to the short-term SIFMA swap index, which is a composite index of tax-exempt seven day high-grade variable rate demand obligations similar to the state's variable rate GO bonds.

FIGURE 9

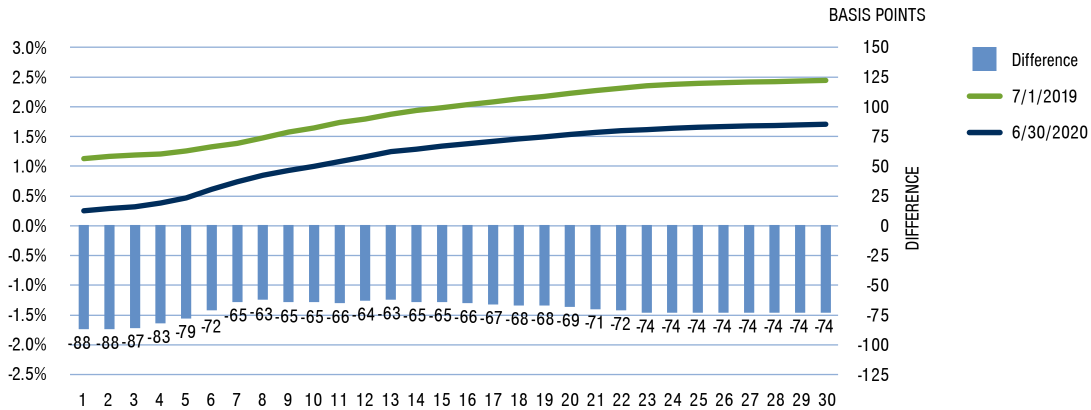
MUNICIPAL BOND MARKET, MONTHLY FUND INFLOWS / OUTFLOWS



Source: Investment Company Institute (ICI)

FIGURE 10

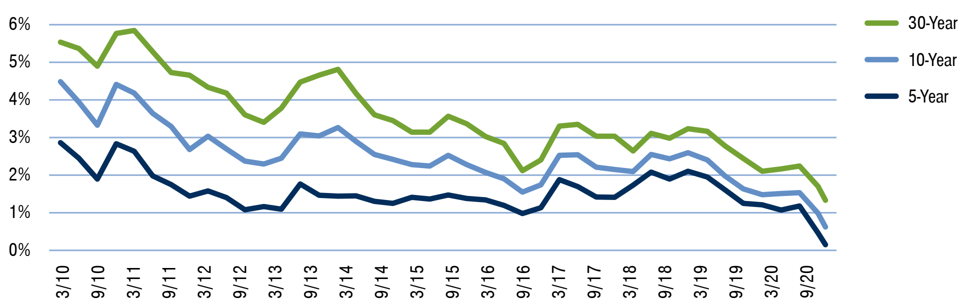
CALIFORNIA GO MMD BENCHMARK RATES



Source: Thomson Municipal Market Monitor (TM3)

FIGURE 11

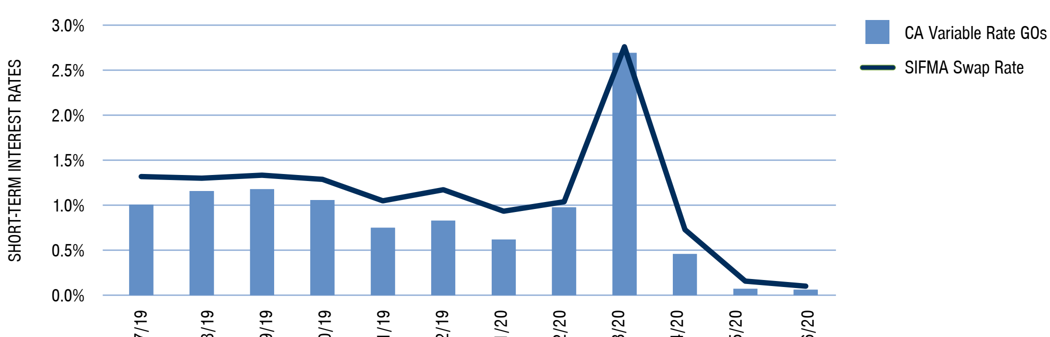
5-, 10- AND 30-YEAR CALIFORNIA GO MMD



Source: Thomson Municipal Market Monitor (TM3)

FIGURE 12

MONTHLY AVERAGE SHORT-TERM INTEREST RATES



Source: Thomson Municipal Market Monitor (TM3) and California State Treasurer's Office

SECTION 2 | SNAPSHOT OF THE STATE'S DEBT

OVERVIEW

Figure 13 summarizes the state's long-term debt as of June 30, 2020. This summary of state debt includes General Fund-supported GO bonds approved by voters and lease revenue bonds (LRBs) authorized by the Legislature, as well as self-liquidating GO bonds. Self-liquidating GO bonds receive revenues from specified sources so that money from the General Fund is not expected to pay debt service. However, the General Fund is obligated to pay debt service should the revenues to support repayment not be sufficient. The figures include bonds the state has sold (outstanding) and bonds authorized but not yet sold. A detailed list of the state's outstanding bonds, and their debt service requirements, can be found in Appendices A and B.

FIGURE 13

SUMMARY OF THE STATE'S DEBT (a)
AS OF JUNE 30, 2020 (dollars in billions)

	OUTSTANDING	AUTHORIZED BUT UNISSUED	TOTAL
GENERAL FUND-SUPPORTED ISSUES			
General Obligation Bonds	$71.97	$31.87	$103.84
Lease Revenue Bonds	8.48	7.13	15.61
TOTAL GENERAL FUND SUPPORTED ISSUES	$80.45	$39.00	$119.45
SELF-LIQUIDATING GENERAL OBLIGATION BONDS			
Veterans General Obligation Bonds	$0.77	$0.90	$1.67
California Water Resources Development General Obligation Bonds	0.01	0.17	0.18
TOTAL SELF-LIQUIDATING GENERAL OBLIGATION BONDS	$0.78	$1.07	$1.85
TOTAL	$81.23	$40.07	$121.30

(a) Debt obligations not included in Figure 13: Any short-term obligations such as commercial paper or revenue anticipation notes; revenue bonds issued by state agencies which are repaid from specific revenues outside the General Fund; and "conduit" bonds, such as those issued by state financing authorities on behalf of other governmental or private entities whose obligations secure the bonds.

- Approximately 4.4 percent of the state's outstanding GO bonds carry variable interest rates, which is lower than the statutorily authorized maximum of 20 percent. The State Treasurer has adopted a Debt Management Policy that, as of the date hereof, further reduces this limitation on variable rate indebtedness to 10 percent of the aggregate amount of long-term GO bonds outstanding. The remaining 95.6 percent of the state's outstanding GO bonds have fixed interest rates.
- The state has no interest rate hedging contracts on any debt discussed in this report.

INTENDED ISSUANCE OF GENERAL FUND-SUPPORTED BONDS

The State Treasurer's Office (STO) estimates of intended issuance are based on Department of Finance (DOF) projections of state departments' funding needs. Projections for new-money debt issuance are based on a variety of factors and are periodically updated. Factors that could affect the amount of issuance include actual spending by departments, revised funding needs, overall budget constraints, use or repayment of commercial paper, general market conditions and other considerations. Actual issuance amounts often vary significantly from initial estimates.

Figure 14 shows the STO's estimated issuance of new-money General Fund-supported bonds over the current and next fiscal year. Only currently authorized but unissued GO bonds are reflected in Figure 14. The estimated issuance may increase should new bond programs be approved.

As shown in Figure 14, STO preliminarily estimates the state will issue a combined $11.5 billion of new money General Fund-supported bonds in 2020-21 and 2021-22. Using these assumptions for debt issuance, the STO estimates debt service payments from the General Fund will increase by $46.3 million in 2020-21 and $389 million in 2021-22.[1] A detailed list of the estimated debt service requirements can be found in Appendix B.

FIGURE 14

ESTIMATED ISSUANCE, GENERAL FUND-SUPPORTED BONDS (a) (dollars in millions)

	2020-21	2021-22	TOTAL
General Obligation Bonds (b)	$4,800	$4,210	$9,010
Lease Revenue Bonds	$782	$1,705	$2,487
TOTAL GENERAL FUND-SUPPORTED BONDS	$5,582	$5,915	$11,497

(a) Debt issuances not included in Figure 14: Any refunding bonds, short-term obligations such as commercial paper or revenue anticipation notes; revenue bonds issued by state agencies which are repaid from specific revenues outside the General Fund; and "conduit" bonds, such as those issued by state financing authorities on behalf of other governmental or private entities whose obligations secure the bonds.

(b) The initial issuance of GO bonds may be in the form of commercial paper notes.

[1] Figures reflect debt service from only a portion of the bond sales listed in Figure 14. For example, $2.74 billion of the $4.8 billion in GO bonds and $63.3 million of the $782 million in LRBs planned for 2020-21 will be sold during the first half of the fiscal year. These bonds will have interest payments in the second half of the fiscal year. The remaining GO bonds and LRBs to be sold in 2020-21 will not have a debt service payment during the fiscal year. The first interest payment for these bonds will be in 2021-22.

SECTION 3 | MEASURING DEBT BURDEN

DEBT RATIOS

Measuring California's debt level with various ratios – while not particularly helpful in assessing debt affordability – does provide a way to compare the state's burden to that of other borrowers. The three most commonly-used ratios are: debt service as a percentage of General Fund revenues; debt as a percentage of personal income; and debt per capita. A fourth ratio – debt as a percentage of state gross domestic product (GDP) – also can be a useful comparison tool.

DEBT SERVICE AS PERCENTAGE OF GENERAL FUND REVENUES

Because debt service is considered a fixed part of a budget, credit analysts compare General Fund-supported debt service to General Fund revenues to measure a state's fiscal flexibility. California's ratio of General Fund-supported debt service to General Fund revenues was 5.76 percent[2] in 2019-20. That figure is based on $7.92 billion[3] of GO and LRB debt service payments versus $137.6 billion of General Fund revenues (less transfers to/from the Budget Stabilization Account/ Rainy Day Fund).[4] The STO estimates this ratio will be 6.16 percent[5] in 2020-21. That estimate is based on an expected $8.00 billion of debt service payments versus $129.9 billion of General Fund revenues (less transfers to/from the Budget Stabilization Account/Rainy Day Fund).[4]

DEBT AS PERCENTAGE OF PERSONAL INCOME

Comparing a state's level of debt to the total personal income of its residents is a way to measure a state's ability to generate revenues and repay its obligations. In its 2020 State Debt Medians report, Moody's lists the state's ratio of net tax-supported debt to personal income at 3.2 percent.[6]

DEBT PER CAPITA

Debt per capita measures residents' average share of a state's total outstanding debt. It does not account for the employment status, income or other financial resources of residents. As a result, debt per capita does not reflect a state's ability to repay its obligations as well as other ratios, such as debt service as a percentage of General Fund revenues or debt as a percentage of personal income. In its 2020 State Debt Medians report, Moody's lists the state's net tax-supported debt per capita at $2,147.[6]

DEBT AS PERCENTAGE OF STATE GDP

Debt as a percentage of GDP generally is used to measure the financial leverage provided by an issuer's economy. Specifically, this debt ratio compares what an issuer owes versus what it produces. California has one of the largest economies in the world and one of its most diverse. In its 2020

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2 Does not reflect offsets due to subsidy payments from the federal government for Build America Bonds (BABs)s or transfers from special funds. When debt service is adjusted to account for approximately $2.0 billion of estimated offsets, the 2019-20 debt service decreases to $5.9 billion, and the ratio of debt service to General Fund revenues drops to 4.32 percent.

3 Excludes special fund bonds, for which debt service each year is paid from dedicated funds.

4 Source: Department of Finance General Fund Multi-Year Forecast, 2020 Budget Act.

5 Does not reflect offsets due to subsidy payments from the federal government for BABs or transfers from special funds. When debt service is adjusted to account for approximately $2.1 billion of estimated offsets, the 2020-21 debt service decreases to $5.9 billion and the ratio of debt service to General Fund revenues drops to 4.56 percent.

6 Moody's calculation of net tax-supported debt includes GO bonds (non self-liquidating), LRBs, Enterprise Revenue Bonds, GO commercial paper notes, tobacco securitization bonds with a General Fund backstop, various regional center bonds, and State Building Lease Purchase bonds.

FIGURE 15

DEBT TO PERSONAL INCOME OF 10 MOST POPULOUS STATES

STATE	MOODY'S/S&P/ FITCH (a)	DEBT TO PERSONAL INCOME (b)
Texas	Aaa/AAA/AAA	0.70%
Michigan	Aa1/AA/AA	1.20%
North Carolina	Aaa/AAA/AAA	1.20%
Florida	Aaa/AAA/AAA	1.50%
Georgia	Aaa/AAA/AAA	2.00%
Ohio	Aa1/AA+/AA+	2.30%
Pennsylvania	Aa3/A+/AA-	2.60%
California	*Aa2/AA-/AA*	*3.20%*
Illinois	Baa3/BBB-/BBB-	4.50%
New York	Aa1/AA+/AA+	4.60%
MOODY'S MEDIAN ALL STATES		2.00%
MEDIAN FOR THE 10 MOST POPULOUS STATES		2.15%

(a) Moody's, S&P and Fitch ratings as of August 2020.

(b) Figures as reported by Moody's in its 2020 State Debt Medians Report released May 2020. As of end of calendar year 2019.

State Debt Medians report, Moody's lists the state's net tax-supported debt as percentage of GDP at 2.70 percent.[6]

DEBT RATIOS OF THE 10 MOST POPULOUS STATES

In its State Debt Medians report, Moody's calculates for each state the ratios of debt to personal income, debt per capita and debt as a percentage of GDP and provides the median ratios across all states. It's useful to compare California's debt levels with those of its "peer group" of the 10 most populous states. As shown in the tables, the median debt to personal income (Figure 15), debt per capita (Figure 16) and debt as a percentage of GDP (Figure 17) of these 10 states are, on average, in line with Moody's median for all states combined. California's ratios, however, rank well above the medians for the 10 most populous states.

FIGURE 16

DEBT PER CAPITA OF 10 MOST POPULOUS STATES

STATE	MOODY'S/S&P/ FITCH (a)	DEBT PER CAPITA (b)
Texas	Aaa/AAA/AAA	$379
North Carolina	Aaa/AAA/AAA	$586
Michigan	Aa1/AA/AA	$593
Florida	Aaa/AAA/AAA	$780
Georgia	Aaa/AAA/AAA	$971
Ohio	Aa1/AA+/AA+	$1,158
Pennsylvania	Aa3/A+/AA-	$1,519
California	*Aa2/AA-/AA*	*$2,147*
Illinois	Baa3/BBB-/BBB-	$2,635
New York	Aa1/AA+/AA+	$3,314
MOODY'S MEDIAN ALL STATES		$1,071
MEDIAN FOR THE 10 MOST POPULOUS STATES		$1,065

(a) Moody's, S&P and Fitch ratings as of August 2020.

(b) Figures as reported by Moody's in its 2020 State Debt Medians Report released May 2020. As of end of calendar year 2019.

FIGURE 17

DEBT AS A PERCENTAGE OF STATE GDP
OF 10 MOST POPULOUS STATES

STATE	MOODY'S/S&P/ FITCH (a)	DEBT AS % OF STATE GDP (b)(c)
Texas	Aaa/AAA/AAA	0.58%
North Carolina	Aaa/AAA/AAA	1.04%
Michigan	Aa1/AA/AA	1.09%
Florida	Aaa/AAA/AAA	1.53%
Georgia	Aaa/AAA/AAA	1.67%
Ohio	Aa1/AA+/AA+	1.94%
Pennsylvania	Aa3/A+/AA-	2.39%
California	*Aa2/AA-/AA*	*2.70%*
Illinois	Baa3/BBB-/BBB-	3.72%
New York	Aa1/AA+/AA+	3.72%
MOODY'S MEDIAN ALL STATES		1.91%
MEDIAN FOR THE 10 MOST POPULOUS STATES		1.81%

(a) Moody's, S&P and Fitch ratings as of August 2020.

(b) Figures as reported by Moody's in its 2020 State Debt Medians Report released May 2020. As of end of calendar year 2019.

(c) State GDP numbers have a one-year lag.

SECTION 4 ANALYSIS OF THE STATE'S CREDIT RATINGS

The state's current GO bond ratings are "AA" from Fitch, "Aa2" from Moody's and "AA-" from S&P. A summary of the latest rating agencies' actions on the State's GO bonds is presented in Figure 18.

Since the last DAR, a year ago, Moody has upgraded the state's GO rating from "Aa3" to "Aa2" and assigned a stable outlook. Fitch and S&P have maintained their "AA stable" and "AA-stable" ratings respectively. A summary of the rating agencies' opinions of the state's credit strengths and challenges is presented in Figure 19.

FIGURE 18

LATEST RATING ACTIONS

RATING AGENCY	ACTION	DATE
Fitch	Affirmed "AA stable" rating	August 2020
Moody's	Upgraded the state's GO ratings from "Aa3" to "Aa2 stable"	October 2019
	Affirmed "Aa2 stable" rating	August 2020
S&P	Affirmed "AA- stable" rating	August 2020

FIGURE 19

STATE OF CALIFORNIA GENERAL OBLIGATION RATING AGENCY COMMENTARY

	FITCH	MOODY'S	S&P
RATING STRENGTHS	• Long term growth prospects for revenues are strong, driven by the state's robust economic fundamentals • Solid ability to manage expenses through the economic cycle	• Massive, diverse and dynamic economy • Recent trend of strong revenue growth and use of surplus funds to build reserves	• Strong economy and good economic diversity • Substantial buildup of reserves and strong overall liquidity going into current recession
RATING CHALLENGES	• Long term liabilities remain a moderate burden on the resource base • Ability to address fiscal impact of coronavirus crisis and recession will be a key test for future assessment of operating performance and the rating	• High revenue volatility with heavy reliance on income taxes • Lower flexibility to adjust spending and raise revenue as compared to other states • Above average leverage and fixed cost burdens	• Substantial projected multiyear decline in tax revenue due to the current recession • High cost of housing relative to other states pose threat to long-term economic growth • Difficult to forecast revenues due to volatile revenue base • Minimal prefunding of retiree health care benefits

APPENDIX A | THE STATE'S DEBT

AUTHORIZED AND OUTSTANDING NON SELF-LIQUIDATING GENERAL OBLIGATION BONDS AS OF JUNE 30, 2020 (DOLLARS IN THOUSANDS)

	GENERAL FUND BONDS	VOTER AUTHORIZATION DATE	AUTHORIZATION AMOUNT	LONG-TERM BONDS OUTSTANDING	COMMERCIAL PAPER OUTSTANDING (a)	UNISSUED
	1988 School Facilities Bond Act (b)	11/08/88	$797,745	$21,915	$ -	$ -
	1990 School Facilities Bond Act (b)	06/05/90	797,875	46,355	-	-
	1992 School Facilities Bond Act (b)	11/03/92	898,211	105,345	-	-
	California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 (f)	03/05/02	2,596,643	1,813,505	19,210	157,148
	California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018	06/05/18	4,100,000	25,035	102,370	3,966,010
	California Library Construction and Renovation Bond Act of 1988 (b)	11/08/88	72,405	5,915	-	-
*	California Park and Recreational Facilities Act of 1984 (b)	06/05/84	368,900	5,905	-	-
*	California Parklands Act of 1980	11/04/80	285,000	1,100	-	-
	California Reading and Literacy Improvement and Public Library Construction and Renovation Bond Act of 2000	03/07/00	350,000	202,580	-	5,040
*	California Safe Drinking Water Bond Law of 1976 (b)	06/08/76	172,500	1,660	-	-
*	California Safe Drinking Water Bond Law of 1984	11/06/84	75,000	980	-	-
*	California Safe Drinking Water Bond Law of 1986	11/04/86	100,000	11,400	-	-
	California Safe Drinking Water Bond Law of 1988	11/08/88	75,000	16,285	-	-
	California Stem Cell Research and Cures Bond Act of 2004	11/02/04	3,000,000	960,520	66,115	246,650
*	California Wildlife, Coastal, and Park Land Conservation Act (b)	06/07/88	768,670	58,770	-	-
	Children's Hospital Bond Act of 2004	11/02/04	750,000	532,565	-	1,530
	Children's Hospital Bond Act of 2008	11/04/08	980,000	767,345	9,100	105,215
	Children's Hospital Bond Act of 2018	11/06/18	1,500,000	0	10,310	1,489,690
	Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998 (Hi-Ed)	11/03/98	2,500,000	1,334,885	-	-
	Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998 (K-12)	11/03/98	6,700,000	2,822,050	5	615
*	Clean Air and Transportation Improvement Bond Act of 1990	06/05/90	1,990,000	430,985	-	4,985

AUTHORIZED AND OUTSTANDING NON SELF-LIQUIDATING GENERAL OBLIGATION BONDS AS OF JUNE 30, 2020 (DOLLARS IN THOUSANDS) CONTINUED

	GENERAL FUND BONDS	VOTER AUTHORIZATION DATE	AUTHORIZATION AMOUNT	LONG-TERM BONDS OUTSTANDING	COMMERCIAL PAPER OUTSTANDING (a)	UNISSUED
*	Clean Water Bond Law of 1984	11/06/84	325,000	3,995	-	-
*	Clean Water and Water Conservation Bond Law of 1978	06/06/78	375,000	2,335	-	-
	Clean Water and Water Reclamation Bond Law of 1988	11/08/88	65,000	10,385	-	-
*	Community Parklands Act of 1986	06/03/86	100,000	1,095	-	-
*	County Correctional Facility Capital Expenditure Bond Act of 1986	06/03/86	495,000	5,815	-	-
	County Correctional Facility Capital Expenditure and Youth Facility Bond Act of 1988	11/08/88	500,000	26,245	-	-
	Disaster Preparedness and Flood Prevention Bond Act of 2006 (e)	11/07/06	3,990,000	2,791,155	138,070	694,122
	Earthquake Safety and Public Buildings Rehabilitation Bond Act of 1990 (g)	06/05/90	292,510	19,050	635	-
*	Fish and Wildlife Habitat Enhancement Act of 1984	06/05/84	85,000	3,375	-	-
	Higher Education Facilities Bond Act of 1988	11/08/88	600,000	12,295	-	-
	Higher Education Facilities Bond Act of June 1990	06/05/90	450,000	21,570	-	540
	Higher Education Facilities Bond Act of June 1992	06/02/92	900,000	140,515	-	-
	Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006	11/07/06	19,925,000	15,514,345	85,010	949,015
	Housing and Emergency Shelter Trust Fund Act of 2002	11/05/02	2,100,000	111,565	-	71,395
	Housing and Emergency Shelter Trust Fund Act of 2006	11/07/06	2,850,000	934,860	46,735	289,585
	Housing and Homeless Bond Act of 1990	06/05/90	150,000	740	-	-
	Kindergarten Through Community College Public Education Facilities Bond Act of 2016 (CCC)	11/08/16	2,000,000	124,770	17,945	1,853,210
	Kindergarten Through Community College Public Education Facilities Bond Act of 2016 (K-12)	11/08/16	7,000,000	2,443,135	12,230	4,350,560
	Kindergarten-University Public Education Facilities Bond Act of 2002 (Hi-Ed)	11/05/02	1,650,000	1,069,550	-	-
	Kindergarten-University Public Education Facilities Bond Act of 2002 (K-12)	11/05/02	11,400,000	7,656,915	1,080	6,240
	Kindergarten-University Public Education Facilities Bond Act of 2004 (Hi-Ed)	03/02/04	2,300,000	1,737,435	-	58,019
	Kindergarten-University Public Education Facilities Bond Act of 2004 (K-12)	03/02/04	10,000,000	6,930,655	7,005	16,160
	Kindergarten-University Public Education Facilities Bond Act of 2006 (Hi-Ed)	11/07/06	3,087,000	2,668,375	840	38,775
	Kindergarten-University Public Education Facilities Bond Act of 2006 (K-12)	11/07/06	7,329,000	5,612,715	2,735	196,620
*	New Prison Construction Bond Act of 1986	11/04/86	500,000	915	-	-
	New Prison Construction Bond Act of 1988	11/08/88	817,000	2,880	35	1,245
	New Prison Construction Bond Act of 1990	06/05/90	450,000	1,080	-	605
	Passenger Rail and Clean Air Bond Act of 1990	06/05/90	1,000,000	2,960	-	-
	Public Education Facilities Bond Act of 1996 (Higher Education)	03/26/96	975,000	351,485	530	4,650
	Public Education Facilities Bond Act of 1996 (K-12) (c)	03/26/96	2,012,035	569,120	-	-
	Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act (e)	03/07/00	1,884,000	1,105,205	-	43,346
	Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (e)(f)	11/07/06	5,266,357	3,228,805	204,285	1,030,897

AUTHORIZED AND OUTSTANDING NON SELF-LIQUIDATING GENERAL OBLIGATION BONDS AS OF JUNE 30, 2020 (DOLLARS IN THOUSANDS) CONTINUED

	GENERAL FUND BONDS	VOTER AUTHORIZATION DATE	AUTHORIZATION AMOUNT	LONG-TERM BONDS OUTSTANDING	COMMERCIAL PAPER OUTSTANDING (a)	UNISSUED
	Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000	03/07/00	2,100,000	1,120,125	7,280	33,725
	Safe, Clean, Reliable Water Supply Act (e)	11/05/96	969,500	392,545	-	62,915
	Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century	11/04/08	9,950,000	3,230,780	36,110	5,553,190
*	School Building and Earthquake Bond Act of 1974	11/05/74	150,000	7,980	-	-
	School Facilities Bond Act of 1990	11/06/90	800,000	72,420	-	-
	School Facilities Bond Act of 1992	06/02/92	1,900,000	223,535	-	10,280
	Seismic Retrofit Bond Act of 1996	03/26/96	2,000,000	818,115	-	-
*	State, Urban, and Coastal Park Bond Act of 1976	11/02/76	280,000	2,035	-	-
	Veterans Homes Bond Act of 2000	03/07/00	50,000	31,290	-	975
	Veterans Housing and Homeless Prevention Bond Act of 2014	06/03/14	600,000	49,180	58,450	490,110
	Veterans and Affordable Housing Bond Act of 2018	11/06/18	3,000,000	99,830	60,380	2,839,200
	Voting Modernization Bond Act of 2002	03/05/02	200,000	2,155	48,260	13,435
	Water Conservation Bond Law of 1988 (g)	11/08/88	54,765	10,320	-	-
*	Water Conservation and Water Quality Bond Law of 1986 (e)	06/03/86	136,500	13,740	-	230
	Water Quality, Supply, and Infrastructure Improvement Act of 2014 (f)	11/04/14	7,465,000	1,272,500	158,465	5,915,090
	Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (e)	11/05/02	3,345,000	2,351,045	15,530	257,374
	TOTAL GENERAL FUND BONDS		$152,751,616	$71,968,035	$1,108,720	$30,758,391

(a) A total of not more than $2.3 billion of commercial paper principal plus accrued interest may be owing at one time. Bond acts marked with an asterisk (*) are not legally permitted to utilize commercial paper.

(b) SB 1018 (06/27/2012) reduced the voter authorized amount.

(c) SB 1018 (06/27/2012) and SB 71 (06/27/2013) reduced the voter authorized amount.

(d) AB 639 (10/10/2013) reduced the voter authorized amount.

(e) AB 1471 (11/04/2014) reduced the voter authorized amount.

(f) SB 5 (6/5/2018) reduced the voter authorized amount.

(g) AB 92 (6/29/2020) reduced the voter authorized amount.

AUTHORIZED AND OUTSTANDING SELF-LIQUIDATING GENERAL OBLIGATION BONDS AS OF JUNE 30, 2020 (DOLLARS IN THOUSANDS)

ENTERPRISE FUND BONDS (SELF-LIQUIDATING)	VOTER AUTHORIZATION DATE	AUTHORIZATION AMOUNT	LONG-TERM BONDS OUTSTANDING	COMMERCIAL PAPER OUTSTANDING (a)	UNISSUED
* California Water Resources Development Bond Act	11/08/60	$1,750,000	$10,685	$ -	$167,600
Veterans Bond Act of 1986	06/03/86	850,000	8,060	-	-
Veterans Bond Act of 1988	06/07/88	510,000	26,095	-	-
Veterans Bond Act of 1990	11/06/90	400,000	28,600	-	-
Veterans Bond Act of 1996	11/05/96	400,000	53,580	-	-
Veterans Bond Act of 2000	11/07/00	500,000	280,565	-	-
Veterans Bond Act of 2008 (b)	11/04/08	300,000	272,025	-	-
Veterans and Affordable Housing Bond Act of 2018 (CalVet)	11/06/18	1,000,000	99,310	-	900,045
TOTAL ENTERPRISE FUND BONDS		$5,710,000	$778,920	$ -	$1,067,645

(a) A total of not more than $2.3 billion of commercial paper principal plus accrued interest may be owing at one time. Bond acts marked with an asterisk (*) are not legally permitted to utilize commercial paper.

(b) AB 639 (10/10/2013) reduced the voter authorized amount.

AUTHORIZED AND OUTSTANDING
LEASE REVENUE BONDS
AS OF JUNE 30, 2020 (DOLLARS IN THOUSANDS)

GENERAL FUND SUPPORTED ISSUES (a):	OUTSTANDING	AUTHORIZED BUT UNISSUED
STATE PUBLIC WORKS BOARD ISSUES (BY FACILITY LESSEE)		
Board of State and Community Corrections	$83,420	$1,162,203
California Community Colleges	110,310	-
California Department of Corrections and Rehabilitation	3,949,505	758,467
California Department of Forestry and Fire Protection	181,645	206,581
California Department of Veterans Affairs	253,040	7
Department of Developmental Services	90,120	-
Department of Education	121,950	-
Department of General Services	829,070	3,080,582
Department of Public Health	76,995	-
Department of State Hospitals	296,795	-
Judicial Council	1,954,645	1,374,231
Other State Facilities	273,185	548,595
Trustees of the California State University	143,410	-
TOTAL STATE PUBLIC WORKS BOARD ISSUES	$8,364,090	$7,130,666
TOTAL NON-STATE PUBLIC WORKS BOARD STATE FACILITIES ISSUES (b)	$113,005	$ -
TOTAL GENERAL FUND-SUPPORTED ISSUES	$8,477,095	$7,130,666

(a) Lease payments that secure each of these issues are payable from the operating budget of the respective lessees. The operating budgets of the lessees are primarily, but not exclusively, derived from the General Fund.

(b) Includes $33,450,000 Sacramento City Financing Authority Lease-Revenue Refunding Bonds State of California - Cal/EPA Building, 2013 Series A, which are supported by lease payments from the California Environmental Protection Agency; these lease payments are subject to annual appropriation by the State Legislature.

APPENDIX B | THE STATE'S DEBT SERVICE

SCHEDULE OF DEBT SERVICE REQUIREMENTS FOR GENERAL FUND NON SELF-LIQUIDATING BONDS FIXED RATE, AS OF JUNE 30, 2020

FISCAL YEAR ENDING JUNE 30	CURRENT DEBT INTEREST (a)	CURRENT DEBT PRINCIPAL	CURRENT DEBT TOTAL (b)
2021 (c)	$3,454,176,175.86	$3,379,440,000.00	$6,833,616,175.86
2022	3,313,481,284.42	3,453,410,000.00	6,766,891,284.42
2023	3,151,943,280.64	3,021,230,000.00	6,173,173,280.64
2024	3,019,770,499.41	2,919,175,000.00	5,938,945,499.41
2025	2,889,891,641.87	2,932,295,000.00	5,822,186,641.87
2026	2,754,386,514.95	2,991,700,000.00	5,746,086,514.95
2027	2,606,236,167.97	2,984,440,000.00	5,590,676,167.97
2028	2,477,946,320.40	2,711,150,000.00	5,189,096,320.40
2029	2,348,429,340.40	3,005,505,000.00	5,353,934,340.40
2030	2,204,853,777.90	3,049,560,000.00	5,254,413,777.90
2031	2,055,058,230.55	2,711,395,000.00	4,766,453,230.55
2032	1,923,745,141.95	2,873,705,000.00	4,797,450,141.95
2033	1,780,973,803.34	3,010,660,000.00	4,791,633,803.34
2034	1,654,456,482.20	3,499,755,000.00	5,154,211,482.20
2035	1,424,979,579.16	2,785,250,000.00	4,210,229,579.16
2036	1,276,880,991.15	2,824,145,000.00	4,101,025,991.15
2037	1,140,821,845.05	2,854,960,000.00	3,995,781,845.05
2038	984,424,075.18	2,963,935,000.00	3,948,359,075.18
2039	862,482,775.30	3,413,375,000.00	4,275,857,775.30
2040	577,902,963.85	1,985,410,000.00	2,563,312,963.85
2041	415,855,412.52	2,190,000,000.00	2,605,855,412.52
2042	313,575,412.52	1,319,000,000.00	1,632,575,412.52
2043	258,118,037.52	1,326,325,000.00	1,584,443,037.52
2044	184,549,053.14	875,000,000.00	1,059,549,053.14
2045	150,011,843.76	893,925,000.00	1,043,936,843.76
2046	108,755,968.76	725,000,000.00	833,755,968.76
2047	76,530,968.76	525,000,000.00	601,530,968.76
2048	49,995,221.88	650,000,000.00	699,995,221.88
2049	31,059,475.00	315,000,000.00	346,059,475.00
2050	16,934,475.00	600,000,000.00	616,934,475.00
TOTAL	$43,508,226,760.41	$68,789,745,000.00	$112,297,971,760.41

(a) The amounts do not reflect any interest subsidy under the Build America Bonds program. Subsidy not pledged to the repayment of debt service.

(b) Includes scheduled mandatory sinking fund payments. Does not include outstanding commercial paper.

(c) Represents the debt service requirements from July 1, 2020 through June 30, 2021.

SCHEDULE OF DEBT SERVICE REQUIREMENTS FOR GENERAL FUND NON SELF-LIQUIDATING BONDS VARIABLE RATE, AS OF JUNE 30, 2020

FISCAL YEAR ENDING JUNE 30	CURRENT DEBT		
	INTEREST (a)	PRINCIPAL	TOTAL (b)
2021 (c)	$18,357,801.64	$154,400,000.00	$172,757,801.64
2022	17,991,694.25	39,200,000.00	57,191,694.25
2023	17,967,343.86	61,100,000.00	79,067,343.86
2024	17,981,662.44	173,600,000.00	191,581,662.44
2025	17,792,769.08	116,400,000.00	134,192,769.08
2026	17,733,029.33	203,300,000.00	221,033,029.33
2027	16,633,620.41	215,600,000.00	232,233,620.41
2028	13,639,778.64	559,000,000.00	572,639,778.64
2029	9,737,861.12	467,700,000.00	477,437,861.12
2030	6,382,092.21	364,390,000.00	370,772,092.21
2031	3,184,286.71	323,600,000.00	326,784,286.71
2032	1,034,009.63	325,600,000.00	326,634,009.63
2033	156,434.68	171,400,000.00	171,556,434.68
2034	10,872.71	1,600,000.00	1,610,872.71
2035	9,985.05	-	9,985.05
2036	10,028.30	-	10,028.30
2037	9,941.73	-	9,941.73
2038	9,985.07	-	9,985.07
2039	9,985.04	-	9,985.04
2040	9,970.51	400,000.00	409,970.51
2041	9,662.34	-	9,662.34
2042	9,598.68	-	9,598.68
2043	9,598.68	-	9,598.68
2044	9,640.44	-	9,640.44
2045	9,609.59	-	9,609.59
2046	9,625.05	-	9,625.05
2047	8,016.48	1,000,000.00	1,008,016.48
TOTAL	$158,728,903.67	$3,178,290,000.00	$3,337,018,903.67

(a) The estimate of future interest payments is based on rates in effect as of June 30, 2020. The interest rates for the daily, weekly and monthly rate bonds range from 0.04-0.96%. The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, Series 2016A currently bears interest at a fixed rate of 4.00% (the "Prop 1B Put Bonds"). The Prop 1B Put Bonds will bear interest at the fixed rate until their respective reset date, and are assumed to bear the fixed rate from their respective reset date until maturity.

(b) Includes scheduled mandatory sinking fund payments. Does not include outstanding commercial paper.

(c) Represents the estimated debt service requirements from July 1, 2020 through June 30, 2021.

SCHEDULE OF DEBT SERVICE REQUIREMENTS FOR ENTERPRISE FUND SELF-LIQUIDATING BONDS FIXED RATE, AS OF JUNE 30, 2020

FISCAL YEAR ENDING JUNE 30	CURRENT DEBT		
	INTEREST	PRINCIPAL	TOTAL (a)
2021 (b)	$26,015,318.78	$34,835,000.00	$60,850,318.78
2022	25,203,281.28	19,235,000.00	44,438,281.28
2023	24,760,282.53	15,720,000.00	40,480,282.53
2024	24,486,953.78	8,235,000.00	32,721,953.78
2025	24,255,156.28	11,100,000.00	35,355,156.28
2026	24,076,191.28	4,210,000.00	28,286,191.28
2027	23,689,277.53	23,695,000.00	47,384,277.53
2028	23,051,634.40	20,855,000.00	43,906,634.40
2029	22,319,908.14	29,830,000.00	52,149,908.14
2030	21,140,536.26	45,155,000.00	66,295,536.26
2031	19,664,927.51	44,750,000.00	64,414,927.51
2032	18,186,448.76	41,870,000.00	60,056,448.76
2033	16,903,990.01	30,730,000.00	47,633,990.01
2034	15,554,108.76	45,190,000.00	60,744,108.76
2035	13,993,742.51	41,945,000.00	55,938,742.51
2036	12,603,570.01	36,630,000.00	49,233,570.01
2037	11,435,397.51	29,005,000.00	40,440,397.51
2038	10,364,406.88	30,300,000.00	40,664,406.88
2039	9,326,437.50	26,055,000.00	35,381,437.50
2040	8,324,098.75	27,240,000.00	35,564,098.75
2041	7,163,065.00	34,925,000.00	42,088,065.00
2042	6,109,882.50	23,095,000.00	29,204,882.50
2043	5,280,867.50	23,915,000.00	29,195,867.50
2044	4,408,307.50	24,595,000.00	29,003,307.50
2045	3,489,413.75	25,585,000.00	29,074,413.75
2046	2,530,420.00	26,625,000.00	29,155,420.00
2047	1,615,275.00	22,760,000.00	24,375,275.00
2048	825,215.00	19,305,000.00	20,130,215.00
2049	277,300.00	9,195,000.00	9,472,300.00
2050	46,700.00	2,335,000.00	2,381,700.00
TOTAL	$407,102,114.71	$778,920,000.00	$1,186,022,114.71

(a) Includes scheduled mandatory sinking fund payments.

(b) Represents the debt service requirements from July 1, 2020 through June 30, 2021.

SCHEDULE OF DEBT SERVICE REQUIREMENTS FOR LEASE-REVENUE DEBT FIXED RATE, AS OF JUNE 30, 2020

FISCAL YEAR ENDING JUNE 30	CURRENT DEBT INTEREST (a)	PRINCIPAL	TOTAL (b)
2021 (c)	$414,912,025.12	$536,435,000.00	$951,347,025.12
2022	389,284,322.98	524,165,000.00	913,449,322.98
2023	364,977,474.17	482,225,000.00	847,202,474.17
2024	341,406,541.90	480,200,000.00	821,606,541.90
2025	317,401,625.51	499,725,000.00	817,126,625.51
2026	292,193,432.36	514,550,000.00	806,743,432.36
2027	266,136,153.86	540,525,000.00	806,661,153.86
2028	239,187,103.71	554,200,000.00	793,387,103.71
2029	211,606,045.34	521,365,000.00	732,971,045.34
2030	185,514,686.38	514,345,000.00	699,859,686.38
2031	160,258,870.58	508,715,000.00	668,973,870.58
2032	134,005,163.44	521,675,000.00	655,680,163.44
2033	108,695,686.88	454,495,000.00	563,190,686.88
2034	85,292,578.16	439,345,000.00	524,637,578.16
2035	62,109,652.80	402,100,000.00	464,209,652.80
2036	44,052,737.50	261,685,000.00	305,737,737.50
2037	31,678,275.00	257,775,000.00	289,453,275.00
2038	19,045,525.00	188,005,000.00	207,050,525.00
2039	10,347,087.50	132,875,000.00	143,222,087.50
2040	4,795,225.00	90,845,000.00	95,640,225.00
2041	2,283,300.00	9,415,000.00	11,698,300.00
2042	1,828,925.00	9,870,000.00	11,698,925.00
2043	1,352,425.00	10,345,000.00	11,697,425.00
2044	852,600.00	10,850,000.00	11,702,600.00
2045	328,375.00	11,365,000.00	11,693,375.00
TOTAL	$3,689,545,838.19	$8,477,095,000.00	$12,166,640,838.19

(a) The amounts do not reflect any interest subsidy under the Build America Bonds program. Subsidy not pledged to the repayment of debt service.

(b) Includes scheduled mandatory sinking fund payments.

(c) Represents the debt service requirements from July 1, 2020 through June 30, 2021.

ESTIMATED DEBT SERVICE REQUIREMENTS ON INTENDED SALES OF AUTHORIZED BUT UNISSUED BONDS DURING FISCAL YEARS 2020-21 AND 2021-22

FISCAL YEAR ENDING JUNE 30	FY 2020-21 GO SALES DEBT SERVICE	FY 2021-22 GO SALES DEBT SERVICE	FY 2020-21 LRB SALES DEBT SERVICE	FY 2021-22 LRB SALES DEBT SERVICE	TOTAL DEBT SERVICE ALL SALES
2021	$45,210,000.00	$ -	$1,107,837.50	$ -	$46,317,837.50
2022	257,293,142.50	43,290,000.00	53,429,897.50	34,944,812.50	388,957,852.50
2023	257,286,217.50	245,440,265.00	53,431,235.00	119,751,072.50	675,908,790.00
2024	257,287,400.00	245,384,335.00	53,443,497.50	119,764,995.00	675,880,227.50
2025	257,287,565.00	245,323,777.50	53,434,887.50	119,759,537.50	675,805,767.50
2026	257,292,767.50	245,248,747.50	53,429,850.00	119,775,907.50	675,747,272.50
2027	257,288,702.50	245,154,610.00	53,436,880.00	119,765,312.50	675,645,505.00
2028	257,286,342.50	245,051,632.50	53,434,267.50	119,768,960.00	675,541,202.50
2029	257,291,135.00	244,939,370.00	53,425,507.50	119,757,647.50	675,413,660.00
2030	257,288,347.50	244,807,587.50	53,434,490.00	119,766,865.00	675,297,290.00
2031	257,288,345.00	244,665,840.00	53,419,037.50	119,766,795.00	675,140,017.50
2032	257,286,147.50	244,508,180.00	53,428,302.50	119,772,722.50	674,995,352.50
2033	257,291,692.50	244,333,772.50	53,429,640.00	119,764,830.00	674,819,935.00
2034	257,289,557.50	244,141,475.00	53,431,545.00	119,758,197.50	674,620,775.00
2035	257,289,417.50	243,935,047.50	53,427,045.00	119,752,392.50	674,403,902.50
2036	257,290,602.50	243,712,635.00	53,424,635.00	119,771,265.00	674,199,137.50
2037	257,287,180.00	243,472,397.50	37,826,512.50	119,768,870.00	658,354,960.00
2038	257,288,315.00	243,212,187.50	37,827,100.00	81,764,867.50	620,092,470.00
2039	257,287,467.50	242,934,760.00	37,830,230.00	81,766,112.50	619,818,570.00
2040	257,288,375.00	242,637,255.00	37,824,192.50	81,770,187.50	619,520,010.00
2041	257,289,152.50	242,316,827.50	37,827,950.00	81,768,095.00	619,202,025.00
2042	257,292,930.00	241,975,227.50	37,824,602.50	81,760,837.50	618,853,597.50
2043	257,287,477.50	241,619,010.00	37,837,732.50	81,768,802.50	618,513,022.50
2044	257,290,497.50	241,233,905.00	37,835,250.00	81,767,275.00	618,126,927.50
2045	257,289,167.50	240,831,077.50	37,825,825.00	81,771,540.00	617,717,610.00
2046	257,290,665.00	240,400,755.00	37,833,040.00	81,766,677.50	617,291,137.50
2047	257,286,642.50	239,947,985.00	-	81,767,562.50	579,002,190.00
2048	257,288,685.00	239,472,620.00	-	-	496,761,305.00
2049	257,287,935.00	238,963,785.00	-	-	496,251,720.00
2050	257,285,272.50	238,430,732.50	-	-	495,716,005.00
2051	257,286,330.00	237,866,792.50	-	-	495,153,122.50
2052	-	237,280,212.50	-	-	237,280,212.50
TOTAL	$7,763,873,475.00	$7,322,532,805.00	$1,180,860,990.00	$2,649,082,140.00	$18,916,349,410.00

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