STRONG INVESTOR DEMAND FOR CALIFORNIA TAX-EXEMPT BONDS

STATE OF CALIFORNIA | DEBT AFFORDABILITY REPORT | OCTOBER 2016

JOHN CHIANG | CALIFORNIA STATE TREASURER

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TREASURER
STATE OF CALIFORNIA

October 1, 2016

Fellow Californians:

It has been a productive year at the California State Treasurer's Office, and we have accomplished much since I released my last Debt Affordability Report a year ago.

We sold $8 billion in general obligation bonds in four offerings.

We launched a new comprehensive open-data website that tracks $1.5 trillion in local and state government debt issued over the last three decades.

We sponsored legislation and an initiative that will bring needed, additional transparency to public finance.

These efforts are part of my continuing drive to modernize the State Treasurer's Office so we can lower costs and maximize efficiency. We want to make the most of every dollar we borrow for essential public works.

Let me fill you in on the details of our various actions and initiatives.

BOND SALES. So far this calendar year we sold $7.1 billion in general obligation bonds. Proceeds from about $2.2 billion worth will be spent on transportation, water, housing and other public works projects. The balance of about $4.8 billion was used to refinance existing general obligation bonds. As a result, taxpayers will save approximately $1.3 billion over the remaining lives of the bonds.

This is a great deal for our state. Every dollar we save in interest charges is available for education, health services, environmental protection and other programs that Californians value. These significant savings are a benefit to the state's bottom line. Since I became Treasurer in January 2015, approximately $4.2 billion in debt service savings has been achieved, when factoring in general obligation sales and issuances from the Department of Water Resources, the University of California, and other state agencies.

The market reception for our bond sales remains positive, thanks to our stable, strong and growing economy, our prudent, on-time budgeting and a commitment by lawmakers and the governor to build a financial reserve to prepare for an eventual recession.

Our more disciplined spending policies won praise from the bond rating agencies. Late last month, Fitch Ratings, following similar actions by Moody's and Standard & Poor's, boosted California's long-term rating to AA-, placing our bonds in the coveted "high-grade" category.

Fitch praised California for its "strong budget management during this period of economic recovery and expansion."

TRANSPARENCY. Selling bonds to fund public infrastructure is important. But it is essential that our borrowing be transparent and officials who manage our debt be accountable to the public and taxpayers.

That is the reason I launched my award-winning "DebtWatch" website last November. The open-data portal, found at **debtwatch.treasurer.ca.gov**, provides details about debt issued by state and local government entities. The site makes it easy for taxpayers to track proposed and issued debt, cost of issuance, and bond and tax election results.

The state and its local governments have borrowed heavily from Wall Street over the past three decades to build roads, schools, and other critical public works. But bonds are not free money and, indeed, obligate the public to repay them through higher taxes and fees. DebtWatch aspires to empower Californians to hold government accountable for borrowing decisions.

The site's debt-related information covers more than 30 years, from 1984 to the present. Included are more than 2.8 million fields of data, which are updated monthly.

DebtWatch, however, is just a beginning in the State Treasurer's Office effort to give taxpayers greater access to information about state and local borrowing and how proceeds get spent.

On September 12, Gov. Jerry Brown signed into law Senate Bill 1029 by state Sen. Robert Hertzberg (D-Van Nuys). The legislation, which I sponsored, mandates reporting of each debt issuance as it is paid and ongoing tracking of how proceeds are spent. Californians need to be sure borrowed money is used wisely and as approved by the voters. SB 1029 will empower taxpayers to be watchdogs by giving them more information about government finance.

PAY-TO-PLAY. In July, my staff and I took aim at cleaning up an unseemly aspect of public finance: the unlawful bankrolling of campaign activities in local bond elections.

Preying on school districts eager to win voter approval for bond measures, some Wall Street firms offer to fund or provide campaign services. In exchange, they win lucrative contracts for helping to issue the bonds once approved by the voters. To offset their campaign spending, these firms demand higher fees which can raise issuance costs to taxpayers by as much as 900%. Such so-called pay-to-play arrangements rip off taxpayers. Moreover they endanger the integrity of school bonds, which are vital tools for building classrooms and meeting the educational needs of our communities.

Further, according to a recent California Attorney General's opinion, payments for these types of arrangements violate state laws governing the use of bond proceeds and public funds.

As the leader of the public finance community in California, I am now requiring Wall Street firms, such as underwriters, lawyers and municipal advisors, to certify that they have policies that ensure their firms will not engage in municipal finance business with issuers to which the firms have made bond campaign contributions. Firms that fail to do so will be removed from my official list of acceptable vendors and barred from being appointed to work on state bond issues.

The California Association of County Treasurers and Tax Collectors is supporting my initiative, along with California Forward and Common Cause, two nonpartisan groups that work for government efficiency and ethics.

Local treasurers throughout the state and I are united in refusing to do business with any firm that promotes these quid-pro-quo schemes that do nothing but inflate taxpayer bills and reduce resources for students.

These reasonable accountability reforms, combined with a strong and growing economy, have helped make the Golden State's municipal bond market healthy and attractive to investors across the country.

They recognize that we prudently and professionally manage our debt so that needed public works gets built while our taxpayers save money.

John Chiang

JOHN CHIANG
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 (2016-17) and the following year (2017-18), 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.

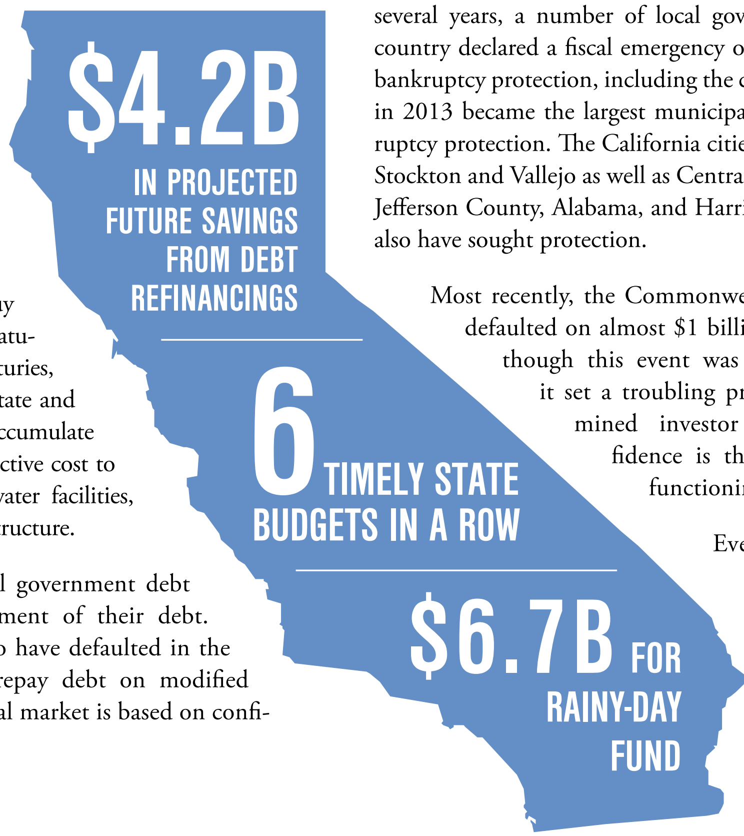
NOTES ON TERMINOLOGY

- 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, 2016-17 means the 2016-17 fiscal year ending June 30, 2017.

STRONG INVESTOR DEMAND FOR CALIFORNIA TAX-EXEMPT BONDS

California is one of the largest issuers of tax-exempt bonds in the United States. The Federal Reserve estimates this market at almost $3.7 trillion of outstanding debt.

The U.S. market for state and local government debt is much bigger than the corporate market, with five times as many issuers. This complex market has a large number of individual borrowers with a strong tendency to "buy and hold" bonds until maturity. Over the past two centuries, this pattern has enabled state and local governments to accumulate investment capital at attractive cost to pay for roads, schools, water facilities, and other necessary infrastructure.



Issuers of state and local government debt rarely default on repayment of their debt. Even the few issuers who have defaulted in the past often commit to repay debt on modified terms. Thus the municipal market is based on confidence that issuers will "do the right thing" when it comes to repaying borrowed money.

However, investor confidence is eroding. Over the last several years, a number of local governments across the country declared a fiscal emergency or filed for Chapter 9 bankruptcy protection, including the city of Detroit, which in 2013 became the largest municipality to file for bankruptcy protection. The California cities of San Bernardino, Stockton and Vallejo as well as Central Falls, Rhode Island, Jefferson County, Alabama, and Harrisburg, Pennsylvania, also have sought protection.

Most recently, the Commonwealth of Puerto Rico defaulted on almost $1 billion of its debt. Even though this event was widely anticipated, it set a troubling precedent and undermined investor confidence. Confidence is the oxygen of highly functioning markets.

Even with these challenges, the municipal market overall has continued to be strong this past year.

INVESTORS LOOK TO U.S. BONDS AS RETURNS DIMINISH ELSEWHERE

Despite the unsettling Puerto Rico situation, strong investor demand for tax-exempt bonds has driven bond yields generally lower in the last year largely as a result of the Federal Reserve's acknowledgment that inflation remains below its 2% target. It is also important to understand that even though interest rates in the U.S. are low in absolute terms–including rates for state and local borrowers–our rates remain substantially higher than those available elsewhere in the world. Because the European Central Bank and the Bank of Japan have been vigorous in purchasing fixed-income securities, yields on securities issued in those regions have fallen sharply. This has forced bond investors to seek better yielding securities in the United States. Demand for state and local bonds accelerated in the face of these diminishing returns elsewhere in the world. For example, in the first two quarters of 2016, the Federal Reserve estimated that the amount of state and local government debt owned by foreign buyers had increased by $2.2 billion to $89.7 billion. These cross-over investors will likely continue to play a meaningful role in the tax-exempt bond market.

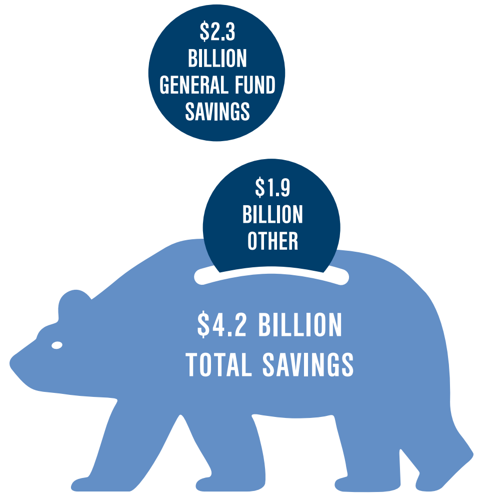
DEBT REFINANCING SAVES MONEY FOR TAXPAYERS

California has taken advantage of these favorable market conditions and has actively pursued refinancing its outstanding debt. The result has been even more savings to the public and the taxpayers than reported a year ago. As of August 31, 2016, refinancing of debt had produced approximately $4.2 billion in savings. Of that total, almost $2.3 billion is of direct benefit to the state's General Fund. The Treasurer intends to continue to pursue additional refinancing opportunities as long as market conditions remain favorable.

LOOKING TOWARD CALIFORNIA'S FUTURE

Looking forward, the Treasurer remains focused on the benefits arising from the recent upgrade in California's long-term credit rating by Fitch Ratings to AA-. California is now solidly in the "high-grade" category of ratings from each of the three major rating agencies. Those upgrades alone, however, do not account for the entirety of the reduced borrowing costs we enjoy.

SAVINGS DUE TO DEBT REFINANCINGS IN 2016*



*As of August 31, 2016

CALIFORNIA'S CURRENT BOND RATINGS

MOODY'S	S&P	FITCH
Aa3	AA-	AA-

Higher ratings are associated with lower borrowing costs. But, there is increasing anecdotal evidence that ratings are only part of a much more complicated mosaic, especially after the spate of municipal bankruptcies over the past 10 years, culminating in the Puerto Rico default. Today, investors are much more attuned to the events that could shape the governmental borrower's future ability to repay regardless of the current rating. That is why the recent actions by the governor, the Legislature, and the people of California to reduce short-term borrowing, pay down budgetary borrowings, and establish rainy day funds are so critically important to California's future.

CONCLUSION

Building on positive factors realized over the past several years, Treasurer Chiang remains convinced that paying down our pension obligations and our future post-employment benefits costs, and planning logically for replacing our infrastructure are vital to keeping California in the favorable position that is reflected in this Debt Affordability Report.

SECTION 1 | MARKET FOR STATE BONDS

The state continues to be one of the largest issuers in the $3.7 trillion U.S. municipal bond market. Over the last five fiscal years, the state has issued an average of $7.0 billion of general obligation (GO) bonds annually. In 2015-16, the state issued $7.3 billion of GO bonds. Of that total, $4.9 billion refunded outstanding GO bonds to produce interest rate savings.

The market for the state's bonds is affected by factors specific to the state, as well as overall conditions in the capital markets. These factors include 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 stocks or other debt capital. Since the last Debt Affordability Report was published in October 2015, municipal interest rates have generally declined through early July 2016, before stabilizing and rising slightly. All interest rates, except for those in the shortest maturities, have declined, with the longer maturities declining the most. In addition, with the continued improvement in the state's credit profile, interest rates on the state's bonds relative to those of other municipal issuers continued to improve substantially. The state's standing in the capital markets today is markedly stronger than it was several years ago.

STATE-SPECIFIC FACTORS

The state's credit profile has been improving significantly since 2012-13. Several factors have contributed to this ongoing positive trend that reflect both state actions and the state's economic performance:

- Beginning in 2012, the state has implemented significant structural fiscal reforms including:
- Voters approved an initiative which reinstated the majority vote for annual legislative approval of the state budget and the elimination of redevelopment agencies, which ended the involuntary redirection of tax revenues from schools and local governments and reduced the burden on the state's General Fund to backfill the schools' loss of money.
- In November 2014, voters approved Proposition 2, a constitutional amendment that strengthens the state's Rainy Day Fund, requires repayment of debt/unfunded liabilities and reduces the General Fund's reliance on capital gains revenues.
- Together, these and other statutory changes have resulted in significant positive institutionalized changes to the state's financial management.
- Since 2012, the state's economy has improved significantly with the unemployment rate declining from 10.4% to 6.2% in 2015, employment increasing from 16.6 million to 17.8 million and the state's personal income rising by more than 13.7%.
- The 2016-17 state budget is the sixth consecutive budget adopted on time, before the June 30 constitutional deadline.
- The temporary increases to personal income taxes (PIT) and sales tax approved by voters through Proposition 30 in November 2012 remain in place. The sales tax increase will expire on December 31, 2016 and the PIT increase will expire on December 31, 2018. An initiative on this November's ballot seeks to extend the PIT portion of Prop 30 until 2030.

- The governor and Legislature have taken steps to substantially pay down the state's past budgetary borrowings before these temporary taxes expire. These prior borrowings reflected budget solutions adopted over the prior decade which, in effect, pushed costs out to future years. In recent years, the state has paid off billions of dollars of these budgetary borrowings. By the end of 2015-16, the Proposition 2 eligible budgetary borrowing had been reduced to $3.9 billion, with the Department of Finance (DOF) projecting that almost all of the remaining Proposition 2 budgetary obligations will be repaid by the end of fiscal year 2019-20.

- The state has also been building up its reserves, providing protection for potential future economic slowdowns. At the end of 2015-16, the state had $3.4 billion in the Budget Stabilization Account ("BSA") and $3.9 billion in the Special Fund for Economic Uncertainties ("SFEU") for total reserves of more than $7.3 billion.

- The state's 2016-17 budget projects continued improvement in the state's fiscal condition, with structurally balanced budgets through 2018-19, and an estimated $3.3 billion transfer to the state's rainy day fund in 2016-17, including a $2 billion contribution in excess of the constitutionally required deposit under Proposition 2. This would bring the BSA to $6.7 billion and total reserves to $8.5 billion by June 30, 2017.

Because of these developments, as well as other improvements to the state's fiscal management, the state's GO bonds were upgraded by Fitch Ratings (Fitch) in August 2016 from A+ to AA-. Moody's Investors Service (Moody's) and Standard & Poor's (S&P) had upgraded the state's GO bonds previously in June 2014 and July 2015, respectively.

Investors have responded positively to the significant improvements in the state's financial management and performance, and to the rating upgrades. 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 index has tightened from a high of more than 150 basis points at the end of 2009 to around 10 basis points at the end of June 2016. This pricing improvement reflects investors' increasing confidence in the state's credit relative to the most highly-rated state-level GO bonds and the reduced supply of the state's bonds offered in the market.

Despite the significant budgetary improvements over the last several years, the state still faces a number of fiscal challenges and risks. These include paying off its remaining deferred obligations, revenue volatility, the cost of public employee retirement benefits, uncertainty regarding the cost of providing health care under the new federal health care legislation, and the threat of a new recession.

FIGURE 1

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

Source: Thomson Municipal Market Monitor (TM3)

OVERALL MARKET CONDITIONS

The discussion below reviews factors in the larger municipal and taxable bond markets that also have significantly affected the market for the state's bonds.

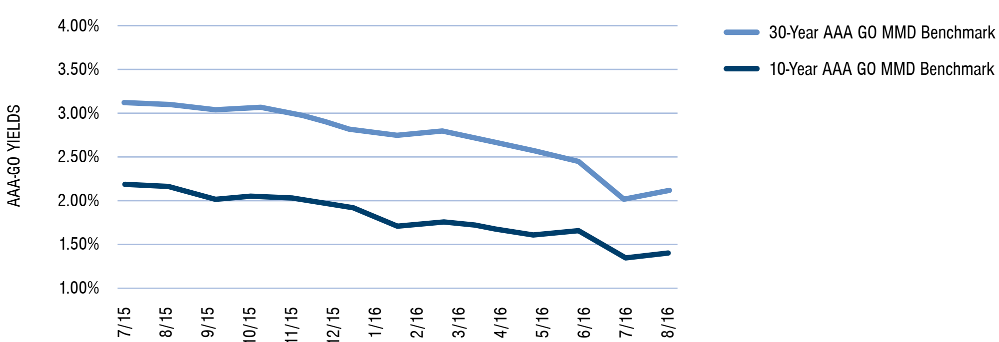
INTEREST RATES

LONG TERM INTEREST RATES. For the first half of 2015-16, long-term interest rates generally declined. Most economists had been predicting that rates would rise before the end of calendar year 2015 and during 2016 based on stronger economic conditions and the gradual tightening of monetary policy by the Federal Reserve, and on December 16, 2015, the Federal Reserve increased its targeted Federal Funds Rate modestly from 0-0.25% to 0.25-0.50%. However, amid renewed concerns over the global economy and weaker than expected domestic economic data, the perceived likelihood that the Federal Reserve would raise interest rates further in 2016 diminished. Additionally, the results of the British voter referendum to exit the European Union (Brexit) sparked additional concerns about the health of the global economy, reducing the probability of the Federal Reserve raising interest rates. As a result, the municipal market experienced a sustained rally throughout 2015 and into early July 2016. Over the course of one year from July 2015 through July 2016, the 10- and 30-year tax-exempt MMD index declined by 103 and 134 basis points, respectively, establishing new all-time lows since the inception of the index in 1985. However, since then, interest rates have increased modestly with the 10-year and 30-year MMD rising by 11 and 20 basis points respectively, due to profit-taking following the Brexit rally, lack of new accommodations by central banks and evidence of an improving labor market.

SHORT TERM INTEREST RATES. While long term tax-exempt interest rates generally declined from July 2015 through July 2016, short-term tax-exempt interest rates have risen significantly. The increases are attributable primarily to upcoming legislative reforms to tax-exempt money market funds, which represent the largest segment of investors of short-term tax-exempt obligations. These reforms will be fully implemented in October 2016 and will require money market funds (i) to be valued at a fluctuating net asset value (NAV) rather than par, (ii) impose withdrawal limitations and charges on investors to prevent large withdrawals during difficult market conditions, and (iii) to reduce the weighted average maturity of their holdings. In response to these upcoming changes, tax-exempt money market funds have shortened the duration of their holdings or in some cases, closed, decreasing the demand for short-term tax-exempt obligations. Total assets owned by these funds have also fallen sharply in recent weeks.

FIGURE 2

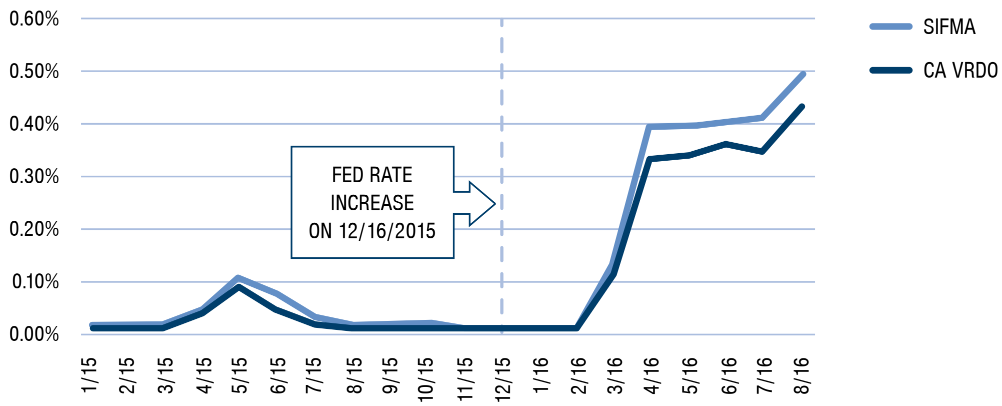
TRENDS OF TAX-EXEMPT INTEREST RATES



Source: Thomson Municipal Market Monitor (TM3)

FIGURE 3

SIFMA VERSUS CALIFORNIA VRDO (MONTHLY AVERAGE RATES)



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

As depicted in Figure 3 above, following the Federal Reserve rate hike on December 16, 2015, both the short-term tax-exempt Securities Industry and Financial Markets Association (SIFMA) Swap Index and the actual average interest rates on the state's tax-exempt variable rate demand obligations (VRDOs) remained unchanged at the extremely low rate of one basis point. However, beginning in March 2016, short-term rates started rising dramatically and as of August 31, 2016, the state's average rates were 63 and 57 basis points respectively. Notwithstanding these increases, at these levels, VRDOs have continued to be a source of very low-cost financing for the state and help to diversify the state's capital structure.

The money market reforms also impacted the interest rates that local governments achieved on their tax and revenue anticipation notes (TRANs) in 2016. For example, select large California TRANs issuers saw their one-year tax-exempt interest rates increase by between 36-38 basis points on their annual cash flow borrowings for 2016-17. While the state did not issue any revenue anticipation notes (RANs) last fiscal year and does not anticipate issuing RANs during this fiscal year, its RANs rates would also have been impacted by these reforms and would be expected to be impacted on any future RANs issuances.

Further, again as depicted in Figure 3, since short-term tax-exempt rates began to increase in March 2016, the state's VRDOs have had lower interest rates than SIFMA, the national index, by an average of approximately five basis points.

SUPPLY AND DEMAND

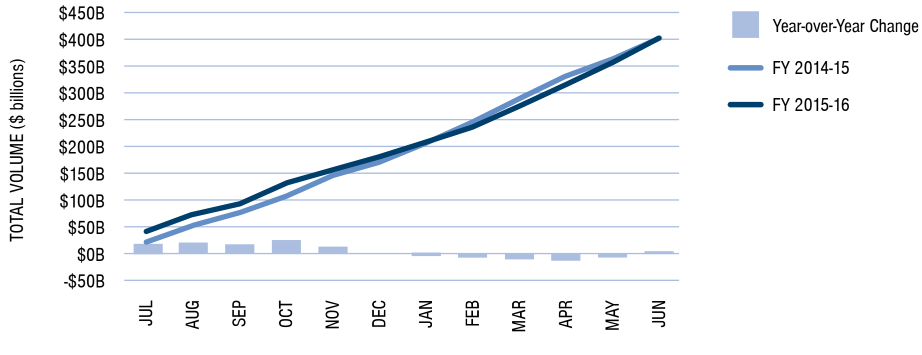
Technical factors such as supply and demand for municipal bonds also affect the pricing of municipal bonds.

SUPPLY. Nationally, primary market issuance volume has been largely unchanged on a fiscal year-over year basis (following a significant decline from 2013-14 to 2014-15). Over the same period, issuance volume in California was lower by $7.3 billion (or 10%). Figures 4 and 5 present the cumulative volume of national and California municipal bond issuance for 2014-15 and 2015-16.

There was a significant increase to the amount of refunding bonds issued in 2014-15 as compared to the previous year. 2015-16 had a similar breakdown of issuance by purpose compared to 2014-15, as shown in Figure 6.

FIGURE 4

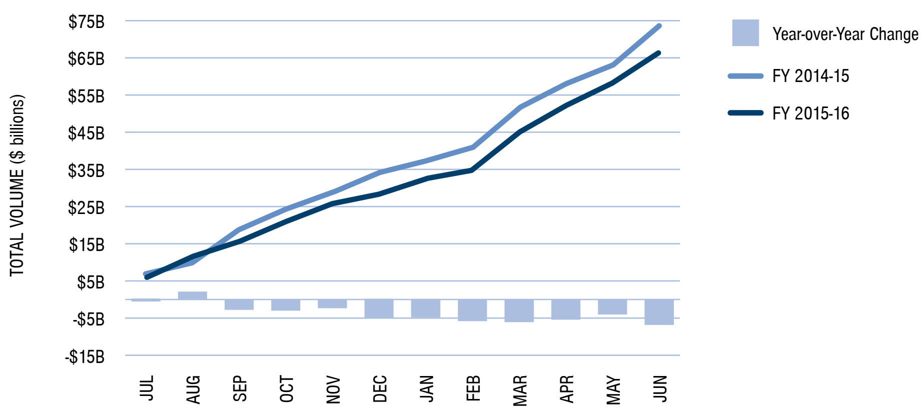
U.S. CUMULATIVE BOND VOLUME, FY 2014-15 AND FY 2015-16



Source: The Bond Buyer

FIGURE 5

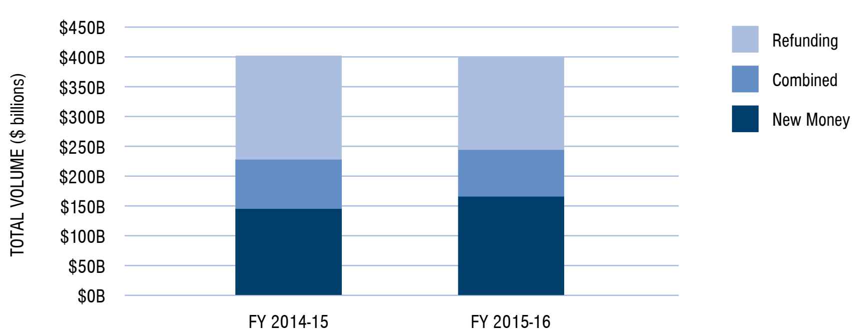
CALIFORNIA CUMULATIVE BOND VOLUME, FY 2014-15 AND FY 2015-16



Source: California Debt and Investment Advisory Commission

FIGURE 6

U.S. ISSUANCE BY PURPOSE, FY 2014-15 AND FY 2015-16



Source: The Bond Buyer

DEMAND. Based on their tax advantaged status, 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 asset inflows and outflows of cash for these funds can materially impact demand for municipal bonds. As shown in Figure 7, calendar year 2014 experienced a period of sustained asset inflows, driving tax-exempt interest rates lower. After several months of outflows in mid-2015, the market has experienced nine consecutive months of inflows, averaging a very robust $5.5 billion per month. This increase in assets and institutional investor demand has had a positive impact on the municipal market.

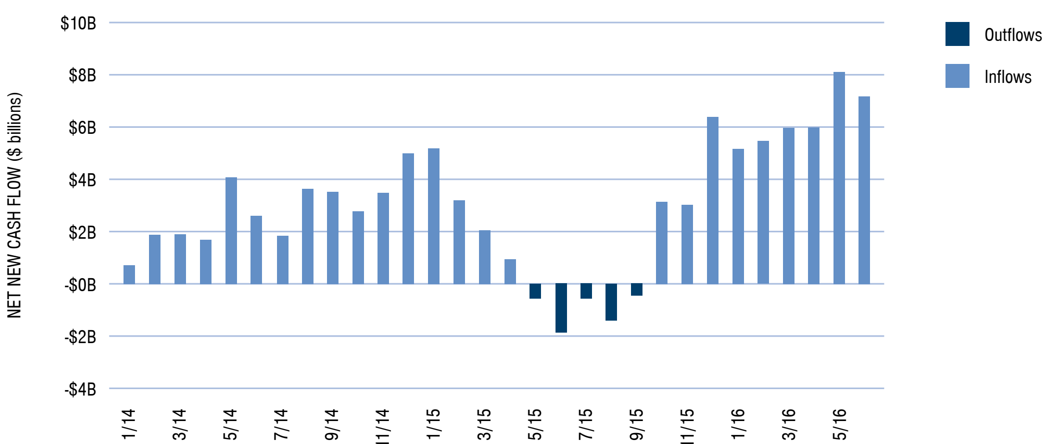
INTEREST RATES ON THE STATE'S BONDS

Interest rates on the state's bonds are the product of both state-specific factors and overall market conditions. On a state-specific basis, as shown earlier in Figure 1, the continued improvement in California's credit profile and supply factors have combined to continue to narrow the interest rate spread between the state's GO bonds and the MMD index. Since July 2015, rates have been steadily declining despite the speculation that the Federal Reserve will increase interest rates. Over the last year, the state's bonds have generally followed a similar pattern to the national market (see Figure 8).

With attractive interest rates, the state was able to refund $5.4 billion of its outstanding GO bonds so far this year to reduce interest costs. These refundings generated approximately $1.3 billion of total debt service savings over the remaining life of the bonds.

FIGURE 7

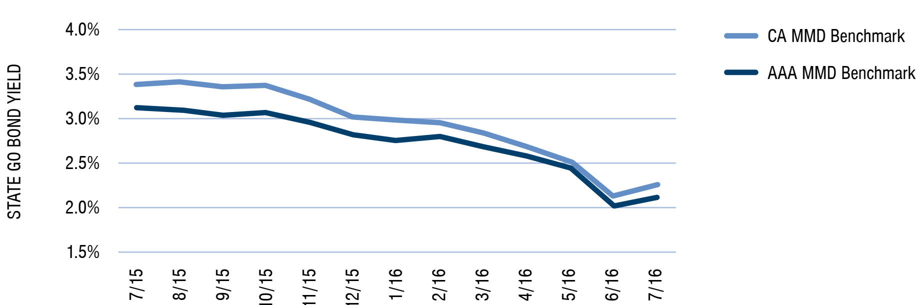
MUNICIPAL BOND MARKET, MONTHLY FUND INFLOWS / OUTFLOWS



Source: Investment Company Institute (ICI)

FIGURE 8

TRENDS OF CALIFORNIA GO BOND YIELDS, 30-YEAR GO BONDS



Source: Thomson Municipal Market Monitor (TM3)

SECTION 2 | SNAPSHOT OF THE STATE'S DEBT

OVERVIEW

Figure 9 summarizes the state's long-term debt as of June 30, 2016. 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 are secured primarily by specific revenues, and 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 9

SUMMARY OF THE STATE'S DEBT (a)
AS OF JUNE 30, 2016 (dollars in billions)

GENERAL FUND-SUPPORTED ISSUES	OUTSTANDING	AUTHORIZED BUT UNISSUED	TOTAL
GENERAL FUND-SUPPORTED ISSUES			
General Obligation Bonds	$74.94	$27.58	$102.52
Lease Revenue Bonds (b)	9.81	3.62	13.43
TOTAL GENERAL-FUND SUPPORTED ISSUES	$84.75	$31.20	$115.95
SELF LIQUIDATING GENERAL OBLIGATION BONDS			
Veterans General Obligation Bonds	$0.66	$0.20	$0.86
California Water Resources Development General Obligation Bonds	0.14	0.17	0.31
TOTAL SELF LIQUIDATING GENERAL OBLIGATION BONDS	$0.80	$0.37	$1.17
TOTAL	$85.55	$31.57	$117.12

(a) Debt obligations not included in Figure 9: 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.

(b) SB 1407 (2008) authorized an additional amount for construction of certain court projects. The authorized but unissued figure excludes the amount for those projects that has not been appropriated by the Legislature.

- Approximately 4.8 percent of the state's outstanding GO bonds carry variable interest rates, which is lower than the statutorily-authorized maximum of 20 percent. The remaining 95.2 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 departments' actual spending patterns, 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 10 shows the STO's estimated issuance of new-money General Fund-supported bonds over the current and next fiscal years. Only currently authorized but unissued GO bonds are reflected in Figure 10. The estimated issuance may increase should new bond programs be approved.

As shown in Figure 10, STO preliminarily estimates the state will issue a combined $8.65 billion of new money General Fund-supported bonds in 2016-17 and 2017-18. Using these assumptions for debt issuance, the STO estimates debt service payments from the General Fund will increase by $41.0 million in 2016-17 and $300.1 million in 2017-18.[1] A detailed list of the estimated debt service requirements can be found in Appendix B.

FIGURE 10

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

	2016-17	2017-18	TOTAL
General Obligation Bonds (b)	$4,052	$4,000	$8,052
Lease Revenue Bonds	$307	$286	$593
TOTAL GENERAL FUND-SUPPORTED BONDS	$4,359	$4,286	$8,645

(a) Debt issuances not included in Figure 10: Any short-term obligations such as commercial paper, refunding bonds 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 10. For example, $2.1 billion of the $4.1 billion in GO bonds and $211.5 million of the $307 million in LRBs planned for 2016-17 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 2016-17 will not have a debt service payment during the fiscal year. The first interest payment for these bonds will be in 2017-18.

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) – can also 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 6.54 percent[2] in 2015-16. That figure is based on $7.7 billion of GO and LRB debt service payments versus $117.0 billion of General Fund revenues (less transfer to the Budget Stabilization Account/Rainy Day Fund). The STO estimates this ratio will be 6.53 percent[3] in 2016-17. That estimate is based on an expected $7.9 billion of debt service payments versus $120.3 billion of General Fund revenues (less transfer to 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 2016 State Debt Medians report, Moody's lists the state's ratio of net tax-supported debt to personal income at 4.7 percent.[5]

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 2016 State Debt Medians report, Moody's lists the state's debt per capita at $2,323.[5]

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 the world's sixth largest economy[6] and one of its most diverse. In its 2016 State Debt Medians report, Moody's lists the state's debt-to-GDP at 3.94 percent.[5]

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2 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 $1.4 billion of estimated offsets, the 2015-16 debt service decreases to $6.2 billion and the ratio of debt service to General Fund revenues drops to 5.32 percent.

3 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 $1.6 billion of estimated offsets, the 2016-17 debt service decreases to $6.3 billion and the ratio of debt service to General Fund revenues drops to 5.21 percent.

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

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

6 California GDP as reported by the U.S. Bureau of Economic Analysis for 2015. Sovereign country ranking and GDP for 2015 as reported by the International Monetary Fund.

FIGURE 11

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	0.90%
North Carolina	Aaa/AAA/AAA	1.80%
Michigan	Aa1/AA-/AA	1.80%
Florida	Aa1/AAA/AAA	2.50%
Pennsylvania	Aa3/AA-/AA-	2.50%
Ohio	Aa1/AA+/AA+	2.60%
Georgia	Aaa/AAA/AAA	2.70%
California	Aa3/AA-/AA-	4.70%
Illinois	Baa2/BBB+/BBB+	5.20%
New York	Aa1/AA+/AA+	5.40%
MOODY'S MEDIAN ALL STATES		2.50%
MEDIAN FOR THE 10 MOST POPULOUS STATES		2.55%

(a) Moody's, S&P and Fitch ratings as of August 2016.

(b) Figures as reported by Moody's in its 2016 State Debt Medians report released May 2016. As of end of calendar year 2014.

FIGURE 12

DEBT PER CAPITA OF 10 MOST POPULOUS STATES

STATE	MOODY'S/S&P/ FITCH (a)	DEBT PER CAPITA (b)
Texas	Aaa/AAA/AAA	$383
North Carolina	Aaa/AAA/AAA	$721
Michigan	Aa1/AA-/AA	$719
Georgia	Aaa/AAA/AAA	$1,029
Florida	Aa1/AAA/AAA	$1,038
Ohio	Aa1/AA+/AA+	$1,091
Pennsylvania	Aa3/AA-/AA-	$1,172
California	Aa3/AA-/AA-	$2,323
Illinois	Baa2/BBB+/BBB+	$2,522
New York	Aa1/AA+/AA+	$3,021
MOODY'S MEDIAN ALL STATES		$1,025
MEDIAN FOR THE 10 MOST POPULOUS STATES		$1,065

(a) Moody's, S&P and Fitch ratings as of August 2016.

(b) Figures as reported by Moody's in its 2016 State Debt Medians report released May 2016. As of end of calendar year 2014.

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 11), debt per capita (Figure 12) and debt as a percentage of GDP (Figure 13) 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 13

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	0.64%
North Carolina	Aaa/AAA/AAA	1.50%
Michigan	Aa1/AA-/AA	1.59%
Ohio	Aa1/AA+/AA+	2.20%
Georgia	Aaa/AAA/AAA	2.21%
Pennsylvania	Aa3/AA-/AA-	2.28%
Florida	Aa1/AAA/AAA	2.51%
California	Aa3/AA-/AA-	3.94%
New York	Aa1/AA+/AA+	4.29%
Illinois	Baa2/BBB+/BBB+	4.41%
MOODY'S MEDIAN ALL STATES		2.21%
MEDIAN FOR THE 10 MOST POPULOUS STATES		2.25%

(a) Moody's, S&P and Fitch ratings as of August 2016.

(b) Figures as reported by Moody's in its 2016 State Debt Medians report released May 2016. As of end of calendar year 2014.

(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, "Aa3" from Moody's and "AA-" from S&P. A summary of rating agencies' actions on the state's GO bonds since the last DAR is presented in Figure 14.

On August 12, 2016, Fitch upgraded the state's GO credit rating one notch to "AA-." Moody's and S&P have maintained their "Aa3" and "AA-" ratings respectively. In its report, Fitch cited the state's positive credit developments, solid ability to manage expenses and strong budget management during this period of economic recovery and expansion. Fitch also cautioned that the "rating is sensitive to the state's ability and willingness, both within the legislative and executive branches, to maintain fiscal discipline throughout the economic cycle."

A summary of the rating agencies' opinion of the state's credit strengths and challenges is presented in Figure 15.

FIGURE 14

LATEST RATING ACTIONS

RATING AGENCY	ACTION	DATE
Fitch	Upgraded GO rating from "A+" to "AA-"	August 2016
Moody's	Affirmed "Aa3" GO rating	August 2016
S&P	Affirmed "AA-" GO rating	August 2016

FIGURE 15

STATE OF CALIFORNIA GENERAL OBLIGATION RATING AGENCY COMMENTARY

	FITCH	MOODY'S	S&P
RATING STRENGTHS	• Institutionalized changes to fiscal operations, combined with ongoing economic and revenue recovery, has materially improved its financial position • Economy is unmatched among U.S. states in its size and diversity • CA has a solid ability to reduce spending through the economic cycle	• Large, diverse and wealthy economy • Healthy liquidity • Significant improvement in budget deficits • Governance improvements leading to on-time budgets	• Deep and diverse economy • Demonstrated commitment in six consecutive budgets to aligning recurring revenues and expenses while paying down budgetary debts • Good and increasing budgetary reserves • Strong overall liquidity
RATING CHALLENGES	• CA revenues are economically sensitive, particularly capital gains • Flexibility to manage budgetary challenges is somewhat restricted due to constitutional requirements and voter initiatives that limit state discretion	• Highly volatile revenue structure • Governance restrictions that make it difficult for state to respond to revenue volatility • Lack of reserves to cushion the state's finances from downturns	• High cost of housing that contributes to weaker business climate a threat to economic growth • Volatile revenue base which is linked to difficult-to-forecast financial market performance • Low-interest rate environment that affects the investment outlook for pension funds • 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, 2016 (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	11/08/88	$797,745	$38,990	$ -	$ -
+	1990 School Facilities Bond Act	06/05/90	797,875	82,085	-	-
+	1992 School Facilities Bond Act	11/03/92	898,211	225,450	-	-
	California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002	03/05/02	2,600,000	2,014,645	17,710	222,410
+	California Library Construction and Renovation Bond Act of 1988	11/08/88	72,405	11,945	-	-
*+	California Park and Recreational Facilities Act of 1984	06/05/84	368,900	11,125	-	-
*	California Parklands Act of 1980	11/04/80	285,000	2,340	-	-
	California Reading and Literacy Improvement and Public Library Construction and Renovation Bond Act of 2000	03/07/00	350,000	236,565	-	5,040
*+	California Safe Drinking Water Bond Law of 1976	06/08/76	172,500	2,660	-	-
*	California Safe Drinking Water Bond Law of 1984	11/06/84	75,000	1,680	-	-
*	California Safe Drinking Water Bond Law of 1986	11/04/86	100,000	19,940	-	-
	California Safe Drinking Water Bond Law of 1988	11/08/88	75,000	26,480	-	-
*+	California Wildlife, Coastal, and Park Land Conservation Act	06/07/88	768,670	103,865	-	-
	Children's Hospital Bond Act of 2004	11/02/04	750,000	637,590	185	46,970
	Children's Hospital Bond Act of 2008	11/04/08	980,000	657,825	385	304,455
	Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998 (Hi-Ed)	11/03/98	2,500,000	1,624,070	-	-
	Class Size Reduction Kindergarten-University Public Education Facilities Bond Act of 1998 (K-12)	11/03/98	6,700,000	3,668,715	-	11,400
*	Clean Air and Transportation Improvement Bond Act of 1990	06/05/90	1,990,000	707,065	-	4,985
*	Clean Water Bond Law of 1984	11/06/84	325,000	8,835	-	-
*	Clean Water and Water Conservation Bond Law of 1978	06/06/78	375,000	3,990	-	-
	Clean Water and Water Reclamation Bond Law of 1988	11/08/88	65,000	18,795	-	-

AUTHORIZED AND OUTSTANDING
NON-SELF LIQUIDATING GENERAL OBLIGATION BONDS
AS OF JUNE 30, 2016 (DOLLARS IN THOUSANDS) CONTINUED

	GENERAL FUND BONDS	VOTER AUTHORIZATION DATE	AUTHORIZATION AMOUNT	LONG TERM BONDS OUTSTANDING	COMMERCIAL PAPER OUTSTANDING (a)	UNISSUED
*	Community Parklands Act of 1986	06/03/86	100,000	2,455	-	-
*	County Correctional Facility Capital Expenditure Bond Act of 1986	06/03/86	495,000	13,595	-	-
	County Correctional Facility Capital Expenditure and Youth Facility Bond Act of 1988	11/08/88	500,000	62,810	-	-
++++	Disaster Preparedness and Flood Prevention Bond Act of 2006	11/07/06	3,990,000	2,228,850	-	1,718,652
	Earthquake Safety and Public Buildings Rehabilitation Bond Act of 1990	06/05/90	300,000	62,785	635	7,490
*	Fish and Wildlife Habitat Enhancement Act of 1984	06/05/84	85,000	4,760	-	-
	Higher Education Facilities Bond Act of 1988	11/08/88	600,000	22,565	-	-
	Higher Education Facilities Bond Act of June 1990	06/05/90	450,000	44,320	-	540
	Higher Education Facilities Bond Act of June 1992	06/02/92	900,000	277,550	-	-
	Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006	11/07/06	19,925,000	16,375,915	266,050	2,196,550
	Housing and Emergency Shelter Trust Fund Act of 2002	11/05/02	2,100,000	439,320	8,320	77,495
	Housing and Emergency Shelter Trust Fund Act of 2006	11/07/06	2,850,000	1,277,220	134,320	839,135
	Housing and Homeless Bond Act of 1990	06/05/90	150,000	1,330	-	-
	Kindergarten-University Public Education Facilities Bond Act of 2002 (Hi-Ed)	11/05/02	1,650,000	1,314,225	-	-
	Kindergarten-University Public Education Facilities Bond Act of 2002 (K-12)	11/05/02	11,400,000	8,902,390	355	57,455
	Kindergarten-University Public Education Facilities Bond Act of 2004 (Hi-Ed)	03/02/04	2,300,000	1,978,215	1,645	58,019
	Kindergarten-University Public Education Facilities Bond Act of 2004 (K-12)	03/02/04	10,000,000	8,340,385	6,530	90,005
	Kindergarten-University Public Education Facilities Bond Act of 2006 (Hi-Ed)	11/07/06	3,087,000	2,986,095	2,635	38,775
	Kindergarten-University Public Education Facilities Bond Act of 2006 (K-12)	11/07/06	7,329,000	6,720,820	4,530	348,435
*	Lake Tahoe Acquisitions Bond Act	08/02/82	85,000	100	-	-
*	New Prison Construction Bond Act of 1986	11/04/86	500,000	1,655	-	-
	New Prison Construction Bond Act of 1988	11/08/88	817,000	11,060	200	1,965
	New Prison Construction Bond Act of 1990	06/05/90	450,000	14,220	-	605
	Passenger Rail and Clean Air Bond Act of 1990	06/05/90	1,000,000	33,980	-	-
	Public Education Facilities Bond Act of 1996 (Higher Education)	03/26/96	975,000	463,950	1,885	4,650
++	Public Education Facilities Bond Act of 1996 (K-12)	03/26/96	2,012,035	813,045	-	-
++++	Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Act	03/07/00	1,884,000	1,329,560	-	43,346
++++	Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006	11/07/06	5,283,000	2,748,930	208,435	2,183,875
	Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000	03/07/00	2,100,000	1,379,620	-	73,820
++++	Safe, Clean, Reliable Water Supply Act	11/05/96	969,500	510,025	-	62,915
	Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century	11/04/08	9,950,000	758,975	-	8,866,730

AUTHORIZED AND OUTSTANDING
NON-SELF LIQUIDATING GENERAL OBLIGATION BONDS
AS OF JUNE 30, 2016 (DOLLARS IN THOUSANDS) CONTINUED

	GENERAL FUND BONDS	VOTER AUTHORIZATION DATE	AUTHORIZATION AMOUNT	LONG TERM BONDS OUTSTANDING	COMMERCIAL PAPER OUTSTANDING (a)	UNISSUED
*	School Building and Earthquake Bond Act of 1974	11/05/74	150,000	13,300	-	-
	School Facilities Bond Act of 1990	11/06/90	800,000	129,010	-	-
	School Facilities Bond Act of 1992	06/02/92	1,900,000	482,170	-	10,280
	Seismic Retrofit Bond Act of 1996	03/26/96	2,000,000	1,094,480	-	-
*	State, Urban, and Coastal Park Bond Act of 1976	11/02/76	280,000	3,555	-	-
	Stem Cell Research and Cures Bond Act of 2004	11/02/04	3,000,000	1,237,730	85,945	1,065,650
	Veterans Homes Bond Act of 2000	03/07/00	50,000	34,495	-	975
	Veterans Housing and Homeless Prevention Bond Act of 2014	06/03/14	600,000	1,725	770	597,250
	Voting Modernization Bond Act of 2002	03/05/02	200,000	11,755	-	64,495
	Water Conservation Bond Law of 1988	11/08/88	60,000	20,965	-	5,235
*++++	Water Conservation and Water Quality Bond Law of 1986	06/03/86	136,500	25,095	-	230
	Water Quality, Supply, and Infrastructure Improvement Act of 2014	11/04/14	7,545,000	20,500	29,255	7,491,475
++++	Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002	11/05/02	3,345,000	2,641,595	1,425	309,574
	TOTAL GENERAL FUND BONDS		$135,349,341	$74,941,755	$771,215	$26,810,881

(a) A total of not more than $2.225 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.

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

++ SB 71 (06/27/2013) reduced the voter authorized amount.

++++ AB 1471 (11/04/2014) reallocated the voter authorized amount.

AUTHORIZED AND OUTSTANDING
SELF LIQUIDATING GENERAL OBLIGATION BONDS
AS OF JUNE 30, 2016 (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	$135,045	$ -	$167,600
	Veterans Bond Act of 1986	06/03/86	850,000	8,160	-	-
	Veterans Bond Act of 1988	06/07/88	510,000	29,695	-	-
	Veterans Bond Act of 1990	11/06/90	400,000	45,910	-	-
	Veterans Bond Act of 1996	11/05/96	400,000	105,755	-	-
	Veterans Bond Act of 2000	11/07/00	500,000	367,955	-	-
+++	Veterans Bond Act of 2008	11/04/08	300,000	99,740	-	200,260
TOTAL ENTERPRISE FUND BONDS			$4,710,000	$792,260	$ -	$367,860

(a) A total of not more than $2.225 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.

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

AUTHORIZED AND OUTSTANDING LEASE REVENUE BONDS AS OF JUNE 30, 2016 (DOLLARS IN THOUSANDS)

GENERAL FUND-SUPPORTED ISSUES	OUTSTANDING	AUTHORIZED BUT UNISSIUED
STATE PUBLIC WORKS BOARD		
California Community Colleges	$218,795,000	$ -
California Department of Corrections and Rehabilitation	4,187,310,000	2,837,296
Trustees of the California State University	207,145,000	49,909
Various State Facilities (a)	4,920,630,000	732,414
TOTAL STATE PUBLIC WORKS BOARD ISSUES	$9,533,880,000	$3,619,619
TOTAL OTHER STATE FACILITIES LEASE-REVENUE ISSUES (b)	$274,310,000	$ -
TOTAL GENERAL FUND-SUPPORTED ISSUES	$9,808,190,000	$3,619,619

(a) Includes projects that are supported by multiple funding sources in addition to the General Fund.

(b) Includes $71,295,000 Sacramento City Financing Authority Lease-Revenue Refunding Bonds State of California - Cal/EPA Building, 2013 Series A, which are supported by lease rentals from the California Environmental Protection Agency; these rental 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, 2016

FISCAL YEAR ENDING JUNE 30	CURRENT DEBT INTEREST (a)	PRINCIPAL	TOTAL (b)
2017 (c)	$3,805,155,498.42	$2,778,735,000.00	$6,583,890,498.42
2018	3,706,313,444.95	2,679,260,000.00	6,385,573,444.95
2019	3,584,950,269.37	2,742,610,000.00	6,327,560,269.37
2020	3,434,587,412.64	2,870,470,000.00	6,305,057,412.64
2021	3,304,614,447.73	2,570,450,000.00	5,875,064,447.73
2022	3,173,213,612.81	2,755,735,000.00	5,928,948,612.81
2023	3,040,662,599.28	2,361,255,000.00	5,401,917,599.28
2024	2,928,492,629.18	2,114,810,000.00	5,043,302,629.18
2025	2,819,405,729.40	2,348,420,000.00	5,167,825,729.40
2026	2,700,039,542.85	2,470,845,000.00	5,170,884,542.85
2027	2,569,879,723.31	2,526,665,000.00	5,096,544,723.31
2028	2,449,258,683.36	2,311,790,000.00	4,761,048,683.36
2029	2,335,414,088.85	2,515,595,000.00	4,851,009,088.85
2030	2,212,724,722.60	2,638,680,000.00	4,851,404,722.60
2031	2,068,583,076.55	2,727,170,000.00	4,795,753,076.55
2032	1,938,111,851.90	2,584,975,000.00	4,523,086,851.90
2033	1,798,471,112.51	2,669,130,000.00	4,467,601,112.51
2034	1,670,870,665.26	3,374,365,000.00	5,045,235,665.26
2035	1,441,084,761.59	3,126,245,000.00	4,567,329,761.59
2036	1,254,757,274.51	2,833,810,000.00	4,088,567,274.51
2037	1,083,190,929.37	3,102,845,000.00	4,186,035,929.37
2038	899,842,559.44	3,268,625,000.00	4,168,467,559.44
2039	747,493,428.95	3,415,270,000.00	4,162,763,428.95
2040	466,769,662.50	1,767,885,000.00	2,234,654,662.50
2041	304,957,793.75	2,190,000,000.00	2,494,957,793.75
2042	202,677,793.75	1,319,000,000.00	1,521,677,793.75
2043	147,220,418.75	1,326,325,000.00	1,473,545,418.75
2044	73,651,398.75	875,000,000.00	948,651,398.75
2045	42,773,425.00	550,000,000.00	592,773,425.00
2046	12,000,000.00	500,000,000.00	512,000,000.00
TOTAL	$56,217,168,557.33	$71,315,965,000.00	$127,533,133,557.33

(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, 2016 through June 30, 2017.

SCHEDULE OF DEBT SERVICE REQUIREMENTS FOR GENERAL FUND NON-SELF LIQUIDATING BONDS VARIABLE RATE, AS OF JUNE 30, 2016

FISCAL YEAR ENDING JUNE 30	CURRENT DEBT INTEREST (a)	CURRENT DEBT PRINCIPAL	CURRENT DEBT TOTAL (b)
2017 (c)	$37,816,931.96	$184,675,000.00	$222,491,931.96
2018	38,048,311.10	243,305,000.00	281,353,311.10
2019	36,888,225.37	113,420,000.00	150,308,225.37
2020	36,198,684.84	105,500,000.00	141,698,684.84
2021	35,628,478.34	154,400,000.00	190,028,478.34
2022	34,682,437.58	39,200,000.00	73,882,437.58
2023	34,543,559.22	61,100,000.00	95,643,559.22
2024	34,368,500.22	173,600,000.00	207,968,500.22
2025	33,714,098.18	116,400,000.00	150,114,098.18
2026	33,321,315.49	203,300,000.00	236,621,315.49
2027	31,683,313.44	215,600,000.00	247,283,313.44
2028	24,568,138.95	449,000,000.00	473,568,138.95
2029	16,474,563.33	457,700,000.00	474,174,563.33
2030	12,229,407.41	304,390,000.00	316,619,407.41
2031	9,045,108.71	213,600,000.00	222,645,108.71
2032	5,908,598.40	316,600,000.00	322,508,598.40
2033	2,098,065.72	271,400,000.00	273,498,065.72
2034	8,799.67	1,600,000.00	1,608,799.67
2035	3,840.00	-	3,840.00
2036	3,856.64	-	3,856.64
2037	3,823.36	-	3,823.36
2038	3,840.00	-	3,840.00
2039	3,840.00	-	3,840.00
2040	3,520.91	1,000,000.00	1,003,520.91
TOTAL	$457,249,258.84	$3,625,790,000.00	$4,083,039,258.84

(a) The estimate of future interest payments is based on rates in effect as of June 30, 2016. The interest rates for the daily, weekly and monthly rate bonds range from 0.27 - 1.56%. The Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, Series 2013B & 2016A currently bears interest at a fixed rate of 4.00%, and Series 2014A bears interest at a fixed rate of 3.00%, until reset dates, and are assumed to bear that rate from reset 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, 2016 through June 30, 2017.

SCHEDULE OF DEBT SERVICE REQUIREMENTS FOR ENTERPRISE FUND SELF LIQUIDATING BONDS FIXED RATE, AS OF JUNE 30, 2016

FISCAL YEAR ENDING JUNE 30	CURRENT DEBT		
	INTEREST	PRINCIPAL	TOTAL (a)
2017 (b)	$25,932,982.48	$58,010,000.00	$83,942,982.48
2018	23,640,277.15	62,325,000.00	85,965,277.15
2019	21,997,311.25	49,000,000.00	70,997,311.25
2020	20,700,126.35	41,365,000.00	62,065,126.35
2021	19,495,632.50	31,445,000.00	50,940,632.50
2022	18,742,600.00	15,785,000.00	34,527,600.00
2023	18,364,550.00	12,015,000.00	30,379,550.00
2024	18,166,085.00	4,365,000.00	22,531,085.00
2025	18,017,292.50	7,070,000.00	25,087,292.50
2026	17,929,555.00	-	17,929,555.00
2027	17,642,737.50	19,300,000.00	36,942,737.50
2028	17,114,506.01	16,275,000.00	33,389,506.01
2029	16,403,353.15	33,070,000.00	49,473,353.15
2030	15,080,410.14	52,210,000.00	67,290,410.14
2031	13,391,019.01	51,975,000.00	65,366,019.01
2032	11,639,987.10	51,165,000.00	62,804,987.10
2033	9,886,001.25	44,685,000.00	54,571,001.25
2034	8,298,710.18	39,750,000.00	48,048,710.18
2035	6,978,220.00	30,985,000.00	37,963,220.00
2036	5,941,492.50	25,220,000.00	31,161,492.50
2037	4,972,551.54	25,525,000.00	30,497,551.54
2038	4,121,176.99	17,915,000.00	22,036,176.99
2039	3,411,132.50	18,735,000.00	22,146,132.50
2040	2,667,813.75	19,605,000.00	22,272,813.75
2041	1,888,997.50	20,520,000.00	22,408,997.50
2042	1,358,727.50	7,780,000.00	9,138,727.50
2043	1,089,606.25	8,085,000.00	9,174,606.25
2044	809,631.25	8,375,000.00	9,184,631.25
2045	519,556.25	8,680,000.00	9,199,556.25
2046	218,950.00	8,995,000.00	9,213,950.00
2047	32,987.50	2,030,000.00	2,062,987.50
TOTAL	$346,453,980.10	$792,260,000.00	$1,138,713,980.10

(a) Includes scheduled mandatory sinking fund payments.

(b) Represents the debt service requirements from July 1, 2016 through June 30, 2017.

SCHEDULE OF DEBT SERVICE REQUIREMENTS
FOR LEASE-REVENUE DEBT
FIXED RATE, AS OF JUNE 30, 2016

FISCAL YEAR ENDING JUNE 30	CURRENT DEBT		
	INTEREST (a)	PRINCIPAL	TOTAL (b)
2017 (c)	$497,854,115.84	$507,690,000.00	$1,005,544,115.84
2018	473,497,678.82	562,920,000.00	1,036,417,678.82
2019	446,675,267.59	538,980,000.00	985,655,267.59
2020	420,068,563.10	527,060,000.00	947,128,563.10
2021	394,872,559.21	497,435,000.00	892,307,559.21
2022	370,167,119.78	483,265,000.00	853,432,119.78
2023	347,589,000.21	439,605,000.00	787,194,000.21
2024	325,711,489.21	435,875,000.00	761,586,489.21
2025	303,435,645.60	453,660,000.00	757,095,645.60
2026	279,899,771.99	467,045,000.00	746,944,771.99
2027	255,309,066.20	491,600,000.00	746,909,066.20
2028	229,873,850.63	503,790,000.00	733,663,850.63
2029	203,663,835.97	469,570,000.00	673,233,835.97
2030	178,839,056.62	461,275,000.00	640,114,056.62
2031	154,199,222.79	454,615,000.00	608,814,222.79
2032	128,644,387.83	462,550,000.00	591,194,387.83
2033	104,003,081.62	397,170,000.00	501,173,081.62
2034	80,809,986.91	407,570,000.00	488,379,986.91
2035	57,246,308.87	377,320,000.00	434,566,308.87
2036	39,319,937.50	243,890,000.00	283,209,937.50
2037	27,619,100.00	239,305,000.00	266,924,100.00
2038	15,522,100.00	179,825,000.00	195,347,100.00
2039	7,217,712.50	124,310,000.00	131,527,712.50
2040	2,078,800.00	81,865,000.00	83,943,800.00
TOTAL	$5,344,117,658.79	$9,808,190,000.00	$15,152,307,658.79

(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, 2016 through June 30, 2017.

ESTIMATED DEBT SERVICE REQUIREMENTS ON INTENDED SALES OF AUTHORIZED BUT UNISSUED BONDS DURING FISCAL YEARS 2016-17 AND 2017-18

FISCAL YEAR ENDING JUNE 30	FY 2016-17 GO SALES DEBT SERVICE	FY 2017-18 GO SALES DEBT SERVICE	FY 2016-17 LRB SALES DEBT SERVICE	FY 2017-18 LRB SALES DEBT SERVICE	TOTAL DEBT SERVICE ALL SALES
2017	$36,936,000	$ -	$4,071,760	$ -	$41,007,760
2018	227,510,850	43,000,000	23,122,646	6,497,286	300,130,783
2019	227,511,590	242,887,438	23,124,399	21,262,108	514,785,534
2020	227,513,310	242,888,235	23,132,738	21,258,305	514,792,588
2021	227,516,720	242,886,330	23,122,045	21,261,189	514,786,284
2022	227,517,440	242,885,830	23,131,724	21,264,735	514,799,729
2023	227,511,090	242,890,505	23,125,655	21,263,148	514,790,398
2024	227,513,110	242,888,665	23,123,241	21,265,516	514,790,533
2025	227,508,540	242,888,635	23,128,693	21,260,931	514,786,799
2026	227,512,330	242,883,403	23,125,774	21,258,483	514,779,989
2027	227,509,050	242,890,510	23,128,791	21,261,919	514,790,270
2028	227,513,380	242,891,825	23,121,723	21,260,103	514,787,030
2029	227,514,600	242,884,553	23,133,469	21,261,896	514,794,518
2030	227,511,790	242,885,345	23,127,719	21,261,049	514,785,903
2031	227,508,960	242,885,073	23,123,971	21,261,309	514,779,313
2032	227,509,830	242,889,498	23,120,799	21,261,311	514,781,438
2033	227,512,720	242,888,815	10,277,183	21,264,578	501,943,295
2034	227,510,570	242,888,113	10,277,288	13,407,539	494,083,509
2035	227,516,540	242,886,695	10,276,420	13,402,361	494,082,016
2036	227,512,990	242,888,545	10,279,099	13,403,415	494,084,049
2037	227,512,590	242,887,078	10,274,939	13,404,676	494,079,283
2038	227,512,230	242,885,263	10,278,459	13,400,349	494,076,300
2039	227,508,710	242,885,518	10,279,081	13,404,409	494,077,718
2040	227,508,450	242,889,478	10,276,421	13,405,719	494,080,068
2041	227,512,490	242,883,440	10,274,998	13,403,369	494,074,296
2042	227,516,290	242,888,150	10,279,136	13,406,221	494,089,798
2043	227,510,510	242,888,233	-	13,403,139	483,801,881
2044	227,510,230	242,888,205	-	-	470,398,435
2045	227,510,060	242,891,465	-	-	470,401,525
2046	227,514,120	242,885,858	-	-	470,399,978
2047	227,511,150	242,888,675	-	-	470,399,825
2048	-	242,890,860	-	-	242,890,860
TOTAL	$6,862,298,240	$7,329,630,230	$453,738,168	$459,465,060	$15,105,131,698

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