Division of Bond Finance
Interest Rate Calculations

February 15, 2023

Division of Bond Finance
Calculation of Long-Term Interest Rate

*Long-Term Interest Rate Information**		
	Low End	High End
Current Estimated Long-Term Interest Rate [1]	3.99%	3.99%
Plus: Volatility Spread [2]	1.40%	2.23%
Long-Term Interest Rate Range	**5.39%**	**6.22%**

[1] *Interest rate estimate for a 30-year bond issue based on 5% coupons and estimated yields and credit spreads as of February 10, 2023. Estimate represents the true interest cost, which factors in the cost of call optionality based on the market standard 10-year par call structure. Excludes costs of issuance and underwriter's discount, which would increase the true cost of borrowing.*

[2] *Used two measures to calculate interest rate volatility; (1) Bond Buyer 11 GO Bond Index maximum annual change over the last 20 fiscal years of 140 basis points and (2) TM3 Municipal Market Data ("MMD") 30-year AAA benchmark yield high-low range over the prior 12 months of 223 basis points.*

Long-Term Interest Rate:

The interest rate range noted above is based on the Division of Bond Finance's historical methodology that analyzes interest rate trends and volatility over the past 20 years and most recent 12-month period. Based on estimated yields and credit spreads as of February 10, 2023, the Division's methodology produces a range of 5.39% to 6.22% for the long-term interest rate.

The municipal market saw continued weakness in the third quarter of 2022, with ongoing rate hikes by the Federal Reserve and steady outflows from tax-exempt bond funds putting pressure on municipal interest rates. As of the last conference in July 2022, the estimated long-term interest rate, before applying volatility spreads, stood at 3.89%. In October 2022, the equivalent estimated long-term interest rate reached 4.59%, an increase of 70 basis points in a span of three months. However, the municipal market rallied late in the year, with rates decreasing as a result of strong technical dynamics including low levels of new issue volume and year-end coupon reinvestments. Still, benchmark AAA MMD interest rates ended 2022 significantly higher than the start of year, with rates rising 159-272 basis points across the curve. Municipal rates have started 2023 strong, driven by year-to-date net inflows for municipal bond funds and light new issuance volume.

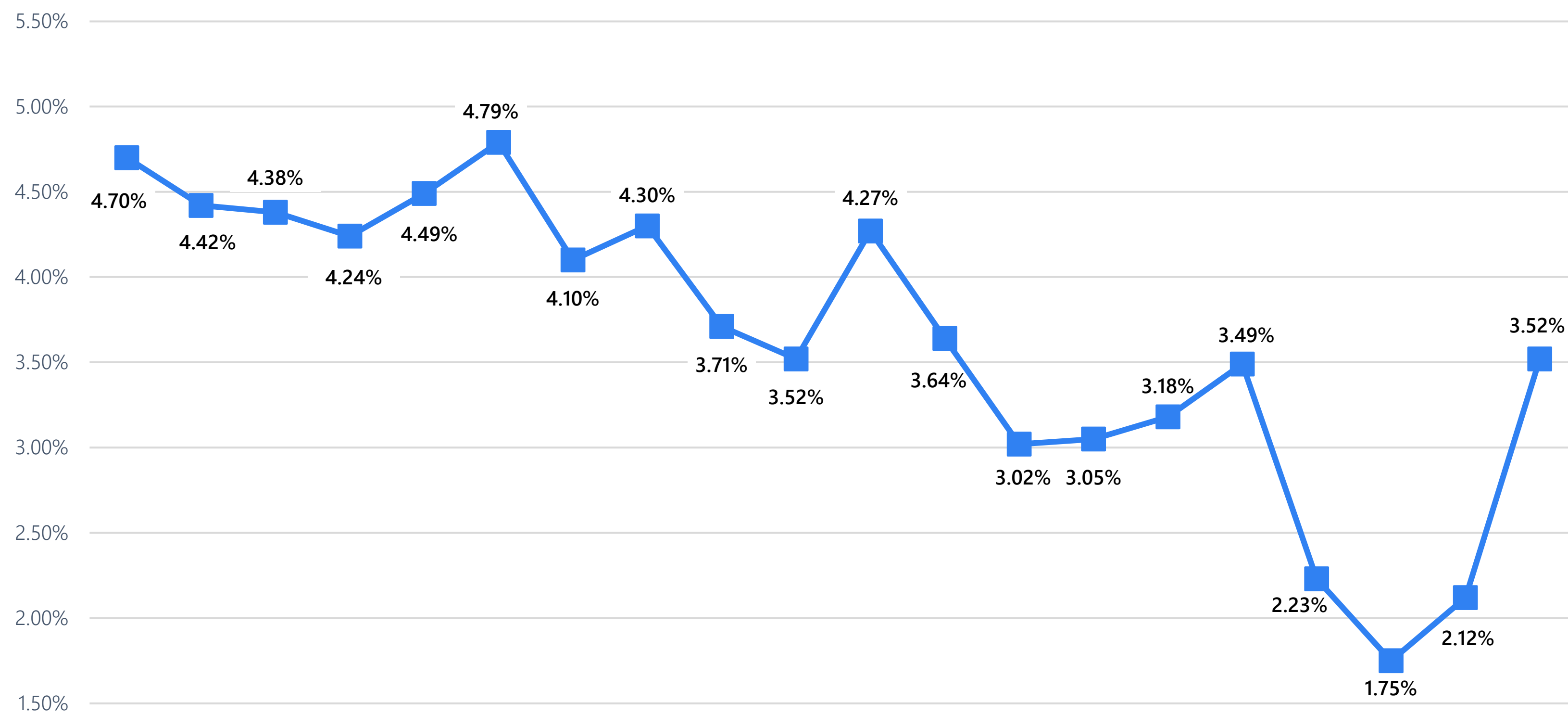
Short-Term Interest Rate:

The State does not have any outstanding variable rate debt and there are no current plans for the issuance of additional variable rate debt. As a result, the Division has not produced a short-term interest rate analysis for this conference.

* *The Division of Bond Finance has supplied the above interest rates to assist the REC in adopting official rates that would be used by State agencies for planning and budgetary purposes. There can be no assurance that actual interest rates for any particular bond issue will not exceed the rates shown above.*

Long-Term Interest Rate Volatility
Change in Bond Buyer 11 GO Bond Average Annual Interest Rates
Last 20 Years

The largest year-over-year change in the annual average Bond Buyer GO Bond Index over the last 20 fiscal years is 140 basis points.



Fiscal Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 YTD	Average
BB 11 GO Avg	4.70%	4.42%	4.38%	4.24%	4.49%	4.79%	4.10%	4.30%	3.71%	3.52%	4.27%	3.64%	3.02%	3.05%	3.18%	3.49%	2.23%	1.75%	2.12%	3.52%	3.70%
YOY Change	(0.02)%	(0.28)%	(0.04)%	(0.14)%	0.25%	0.30%	(0.69)%	0.20%	(0.59)%	(0.19)%	0.75%	(0.63)%	(0.62)%	0.03%	0.13%	0.31%	(1.26)%	(0.48)%	0.37%	1.40%	0.43%*

**Average calculated using absolute values of year-over-year changes.*

Long-Term Interest Rate Volatility
Change in 30-Year Benchmark AAA MMD Rate
Last 12 Months

The 30-year benchmark AAA MMD interest rate ranged from a low of 1.93% to a high of 4.16% over the last 12 months, a difference of 223 basis points. These are stated yields assuming 5% coupons and do not factor in costs of issuance, underwriter's discount, or the effect of call optionality.