

**Division of Bond Finance
Interest Rate Calculations**

July 19, 2024

Division of Bond Finance

Calculation of Long-Term Interest Rate

Long-Term Interest Rate Information*		
	<u>Low End</u>	<u>High End</u>
Current Estimated Long-Term Interest Rate ¹	4.13%	4.13%
Plus: Volatility Spread ²	1.15%	1.40%
Long-Term Interest Rate Range	5.28%	5.53%

¹ Interest rate estimate for a 30-year bond issue based on 5% coupons and estimated yields and credit spreads as of July 15, 2024. 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 Two measures to have been used to calculate interest rate volatility; (1) TM3 Municipal Market Data ("MMD") 30-year AAA benchmark stated yield high-low range over the prior 12 months of 115 basis points and (2) Bond Buyer 11 GO Bond Index maximum annual change over the last 20 fiscal years of 140 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 July 15, 2024, the Division's methodology produces a range of 5.28% to 5.53% for the long-term interest rate.

Since the last conference in December 2023, the market's expectations for rate cuts from the Fed have shifted substantially. While at least one rate cut is now projected to occur in 2024 (versus the three expected at the start of year), the anticipated timing of the Fed's shift in rate policy has been repeatedly pushed back by a resilient US economy and stubborn inflation, though the last 2 months of CPI prints have been encouraging. Municipal interest rates rallied in late 2023 but have drifted higher in 2024, and the base rate used in the long-term interest rate range has increased by 14 basis points since the prior conference. Overall municipal debt issuance is up 31% year-over-year through June and issuance could remain elevated through November as issuers pull deals forward to price in advance of potential market volatility related to the presidential election. Still, even with 2024's increased volume, market participants expect the amount of bonds maturing or being redeemed will outpace new issuance, resulting in net negative supply in the municipal market. This is expected to contribute to continued strong technicals in the tax-exempt market as demand outweighs supply. Additionally, the market has seen overall positive inflows to bond funds this year, though demand remains volatile with investor sentiment shifting continuously based on the latest economic data.

Short-Term Interest Rate:

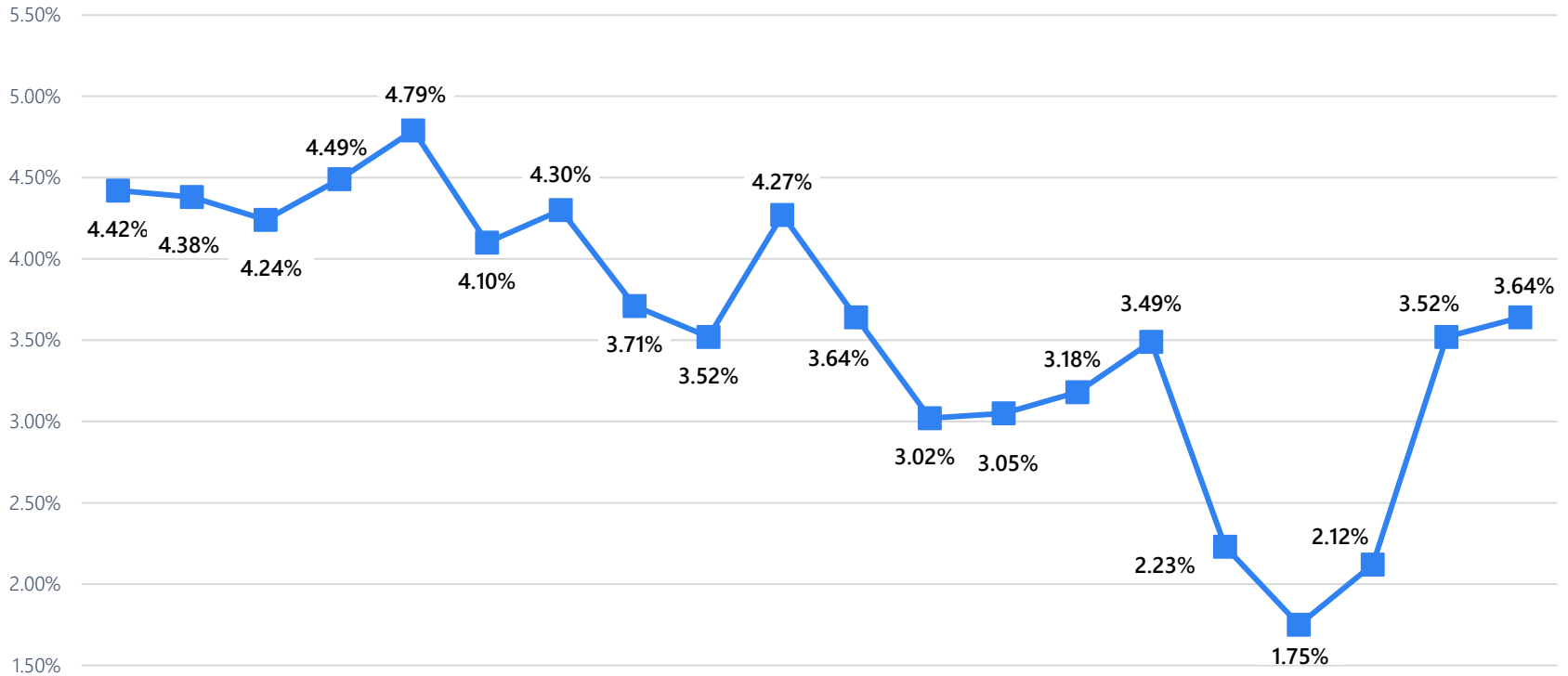
The State does not have any outstanding variable rate debt and there are no current plans for the issuance of additional variable rate debt. As a result, the Division has not produced a short-term interest rate analysis for this conference.

* 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	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	YTD	Average
BB 11 GO Avg	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%	3.64%	3.59%	
YOY Change		(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%	0.12%	0.42%*

*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 3.42% to a high of 4.57% over the last 12 months, a difference of 115 basis points. These are stated yields assuming 5% coupons and do not factor the effect of call optionality (yield-to-maturity). Also excludes costs of issuance and underwriter's discount.

