

**Division of Bond Finance
Interest Rate Calculations**

July 17, 2020

Division of Bond Finance

Calculation of Long-Term Interest Rate

Long-Term Interest Rate Information* [July 17, 2020]		
Current Long-Term Interest Rate ¹	2.93%	2.93%
Plus: Volatility Spread ²	1.26%	1.99%
Long-Term Interest Rate Range	4.19%	4.92%

¹ Interest rate estimate for a 30-year bond issue based on 5% coupons and estimated yields and credit spreads as of July 10, 2019. 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) TM3 Municipal Market Data ("MMD") high-low range over the prior 12 months of 199 basis points and (2) Bond Buyer 11 GO Bond Index maximum annual change over the last 20 years of 126 basis points.

Long-Term Interest Rate:

The interest rate range noted above is based on the Division of Bond Finance's (the "Division") historical methodology that analyzes interest rate trends and volatility over the past 20 years and most recent 12-month period. The Division's methodology produces a range of 4.19% to 4.92% for the long-term interest rate which reflects the significant volatility that the municipal bond market has experienced in recent months as a result of the effects of COVID-19 and the uncertainty of the market environment moving forward.

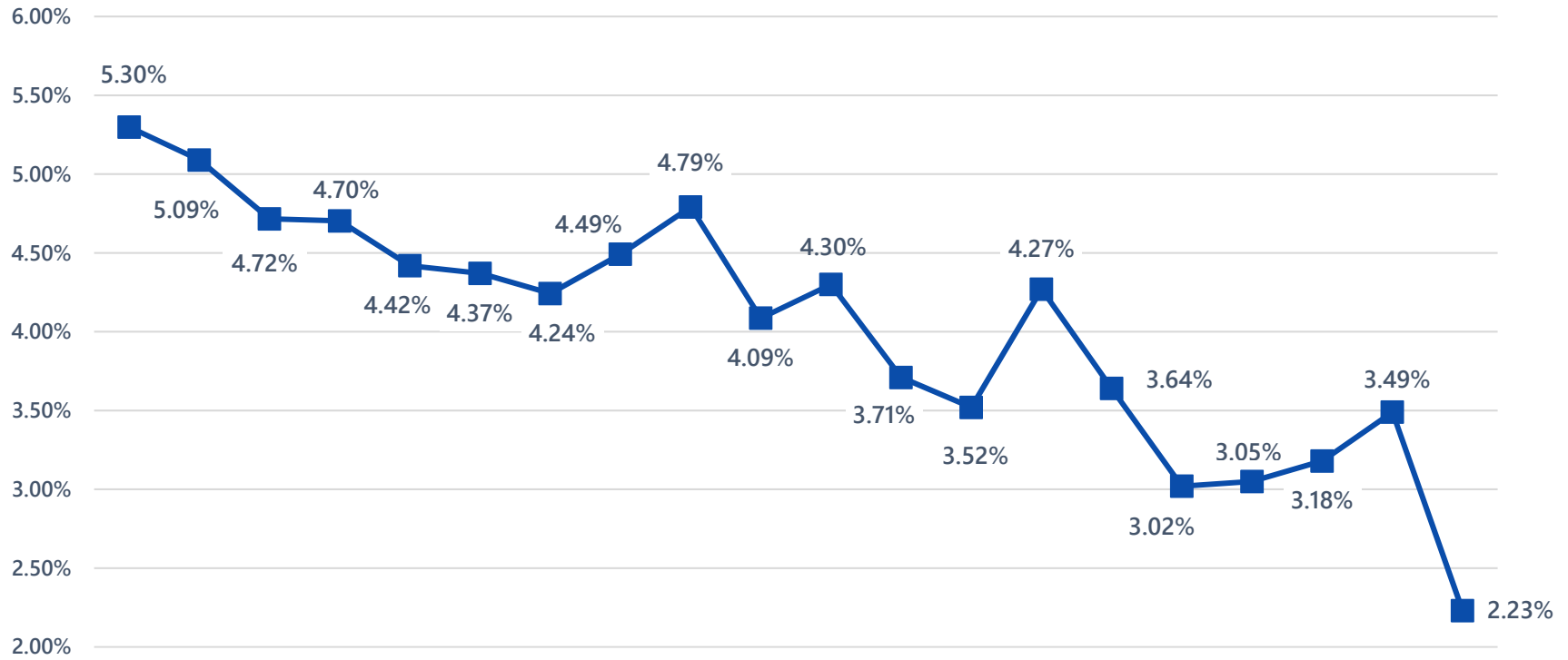
While interest rates have recently stabilized, the municipal market will continue to be heavily influenced by the ongoing market interventions by the Federal Reserve, the future effects of COVID-19 on the financial strength of governments, and the potential for additional Federal stimulus to support State and local government finances. Additionally, the current demand for municipal bonds can vary by credit, with some areas of the market facing headwinds based on the specific effects of COVID-19 on particular sectors of the economy (i.e., general obligation bonds tend to be well received but certain revenue bond credits may not price as well), and this estimated interest rate is intended to be used for a wide range of credits issued by the State.

* 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 maximum change in the annual average Bond Buyer GO Bond Index over the last 20 years is 126 basis points.



Fiscal Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average
BB 11 GO Avg	5.30%	5.09%	4.72%	4.70%	4.42%	4.37%	4.24%	4.49%	4.79%	4.09%	4.30%	3.71%	3.52%	4.27%	3.64%	3.02%	3.05%	3.18%	3.49%	2.23%	4.15%
YOY Change	(0.46)%	(0.21)%	(0.37)%	(0.01)%	(0.28)%	(0.05)%	(0.13)%	0.25%	0.30%	(0.71)%	0.21%	(0.59)%	(0.19)%	0.75%	(0.63)%	(0.62)%	0.03%	0.13%	0.31%	(1.26)%	0.38% ¹

¹ Average calculated using absolute values of year-over-year changes.

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

The 30-year MMD AAA interest rate ranged from a low of 1.38% to a high of 3.37% over the last 12 months, a difference of 199 basis points. These are stated yields assuming 5% coupons and do not factor in costs of issuance, underwriter's discount, or call optionality.

