

Interest Rates Used in Appropriations, Including PECO Executive Summary

December 16, 2019

The Revenue Estimating Conference adopted a series of interest rates for use in the state budgeting process, including any bonding related to Public Education Capital Outlay (PECO). The adopted interest rates take into consideration current benchmark rates and market volatility.

The long-term interest rate is used for bond issues with maturity structures of 20 years or more. The Conference revised the long-term interest rate to 4.75%. This rate is 25 basis points lower than the Division of Bond Finance’s recommendation of 5.00%. The recommended rate of 5.00% was based on a benchmark rate of 3.27% plus a spread of 173 basis points for volatility. The 4.75% adopted rate has a spread of 148 basis points over the benchmark rate.

Long-Term Interest Rate

Fiscal Year	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Interest Rate	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%	4.75%

The Conference agreed with the Division of Bond Finance’s recommendation to discontinue the adoption of a short-term or variable interest rate forecast. The adopted short-term interest rate was previously used to calculate debt service on the outstanding Everglades variable rate bonds. Variable rate bonds were initially issued in 2006 and 2007. The last outstanding issue of Everglades VR 2007A&B Bonds has now been refunded with fixed-rate bonds and was called for redemption on December 4, 2019. The Division of Bond Finance has no plans to recommend the issuance of variable rate bonds in the future.

Finally, the Conference adopted interest rates for use by the Revenue Estimating Conference in its calculation of the Maximum Appropriations for Public Education Capital Outlay (PECO). The adopted interest rates take into consideration current benchmark rates and the December 2019 National Economic Estimating Conference forecast for the yield on municipal bonds – the Bond Buyer 20-Bond Index. Slight downward revisions were made throughout the forecast.

PECO Bonds Interest Rate

Fiscal Year	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Interest Rate - July 2019	4.75%	5.00%	5.00%	5.25%	5.25%	5.25%
Interest Rate - December 2019	4.50%	4.75%	5.00%	5.00%	5.00%	5.00%

**Division of Bond Finance
Interest Rate Calculations**

Revenue Estimating Conference

Interest Rates Used for Appropriations,
including PECO Bond Rates

December 16, 2019

Division of Bond Finance

Calculation of Long-Term Interest Rate

Prior Conference Data [July 17, 2019]		
Long-Term Interest Rate Information		
Current Long-Term Interest Rate ¹	3.37%	3.37%
Plus: Volatility Spread ²	0.75%	1.16%
Long-Term Interest Rate Range	4.12%	4.53%
Recommended Long-Term Interest Rate for FY 2020-21	5.00%	

¹ Interest rate estimate for a 30-year bond issue based on estimated yields and credit spreads as of July 12, 2019.

² Used two measures to calculate interest rate volatility; (1) TM3 Municipal Market Data ("MMD") high-low range over the prior 12 months of 116 basis points and (2) Bond Buyer 11 GO Bond Index maximum annual change over the last 20 years of 75 basis points.

Updated Data [December 16, 2019]		
Long-Term Interest Rate Information*		
Current Long-Term Interest Rate ¹	3.27%	3.27%
Plus: Volatility Spread ²	0.75%	1.35%
Long-Term Interest Rate Range	4.02%	4.62%
Recommended Long-Term Interest Rate for FY 2020-21	5.00%	

¹ Interest rate estimate for a 30-year bond issue based on estimated yields and credit spreads as of December 6, 2019.

² Used two measures to calculate interest rate volatility; (1) TM3 Municipal Market Data ("MMD") high-low range over the prior 12 months of 135 basis points and (2) Bond Buyer 11 GO Bond Index maximum annual change over the last 20 years of 75 basis points.

Long-Term Interest Rate Recommendation:

Based on the interest rate range noted above, which 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 would recommend maintaining the current long-term interest rate for appropriation purposes at 5.00%.

While our methodology shows a range of 4.02% to 4.62% for the long-term interest rate, the Division believes that a more conservative estimate is warranted given that the exceptionally favorable market conditions that the municipal market is currently experiencing cannot be guaranteed to hold through FY 2020-21 (approximately 12-18 months from today).

Tax-exempt interest rates are currently benefitting from a significant supply/demand imbalance, with municipal bond funds reporting 47 consecutive weeks of positive fund flows (nearly \$84 billion of inflows in calendar year 2019 to-date). The supply of municipal bonds has increased in 2019, but a significant portion of the increase is attributable to taxable advance refunding transactions. Through November 2019, tax-exempt bond issuance was up 8.8% year-over-year while taxable issuance had increased 104.4% over the same period of the prior year. Additionally, the Federal Reserve has lowered the benchmark interest rate three times in 2019 which has helped push interest rates lower (though no additional rate cuts are anticipated through 2020). These factors have combined to create a very favorable market for municipal bonds. However, the municipal market may face increased interest rate volatility in the coming months due to political events, including the presidential election in November 2020 (and the potential for further income tax reform), the ongoing US-China trade war, and Brexit.

** 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 for Fiscal Year 2020-21. There can be no assurance that actual interest rates for any particular bond issue will not exceed the rates shown above.*

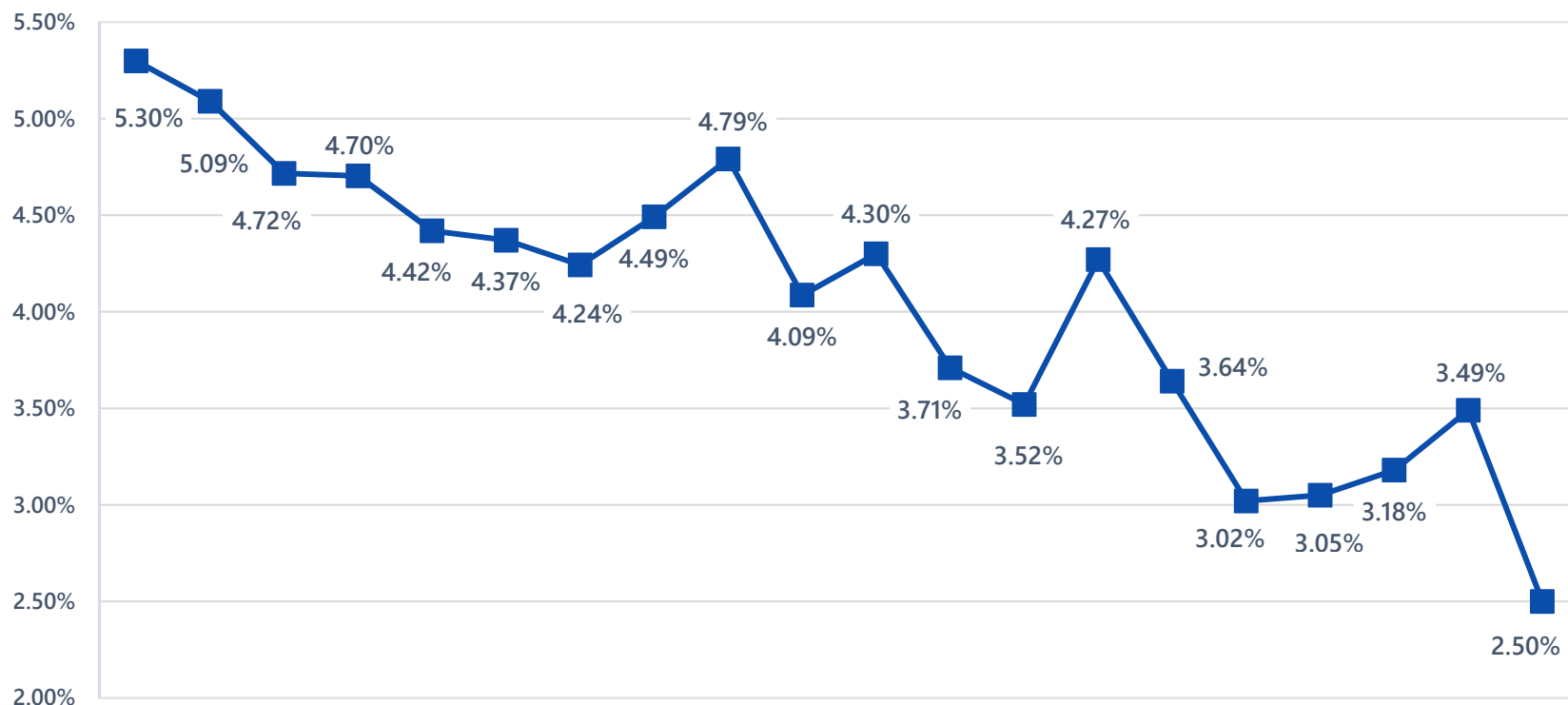
Short-Term Interest Rate Recommendation:

The short-term interest rate recommendation was used to calculate debt service on the outstanding Everglades variable rate debt; that debt issue was refunded with fixed-rate bonds and called for redemption on December 4, 2019. There are now no variable rate bonds outstanding and the Division has no plans to recommend issuing any additional variable rate debt for any State debt program at this time. As a result, an estimated short-term rate for appropriations purposes is not currently necessary.

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 75 basis points.



Fiscal Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD	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%	2.50%	4.17%	
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%	(0.68)%	0.36% 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 1.82% to a high of 3.17% over the last 12 months, a difference of 135 basis points. These are stated yields assuming 5% coupons and do not factor in costs or issuance, underwriter's discount, or call optionality.



PECO BOND SALES AND INTEREST RATES

(BOLD font indicates forecasted values)

	Bond Buyer 20-Bond Index		Series 2020 FY20-21	Series 2021 FY21-22	Series 2022 FY22-23	Series 2023 FY23-24	Series 2024 FY24-25	Series 2025 FY25-26
	JUL 2019	DEC 2019						
2019 Q3	4.56%	3.41%						
2019 Q4	4.60%	3.26%						
2020 Q1	4.63%	3.53%						
2020 Q2	4.65%	3.70%						
2020 Q3	4.66%	3.83%	4.50% Dec 2019					
2020 Q4	4.66%	3.95%	4.75% Jul 2019					
2021 Q1	4.66%	4.05%						
2021 Q2	4.66%	4.14%						
2021 Q3	4.66%	4.23%		4.75% Dec 2019				
2021 Q4	4.64%	4.30%		5.00% Jul 2019				
2022 Q1	4.64%	4.35%						
2022 Q2	4.64%	4.39%						
2022 Q3	4.63%	4.43%			5.00% Dec 2019			
2022 Q4	4.63%	4.46%			5.00% Jul 2019			
2023 Q1	4.62%	4.49%						
2023 Q2	4.62%	4.51%						
2023 Q3	4.61%	4.53%				5.00% Dec 2019		
2023 Q4	4.61%	4.55%				5.25% Jul 2019		
2024 Q1	4.61%	4.56%						
2024 Q2	4.61%	4.58%						
2024 Q3	4.61%	4.59%					5.00% Dec 2019	
2024 Q4	4.61%	4.60%					5.25% Jul 2019	
2025 Q1	4.61%	4.61%						
2025 Q2	4.61%	4.62%						
2025 Q3	4.61%	4.62%						5.00% Dec 2019
2025 Q4	4.61%	4.63%						5.25% Jul 2019
2026 Q1	4.61%	4.64%						
2026 Q2	4.61%	4.65%						

ADOPTED PECO BOND RATES (Dec 2019)	4.50%	4.75%	5.00%	5.00%	5.00%	5.00%
---	--------------	--------------	--------------	--------------	--------------	--------------