

## Interest Rates Used in Appropriations, Including PECO Executive Summary

July 20, 2021

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 adopted a long-term interest rate of 4.50%, 25 basis points lower than the rate adopted in March 2021, after considering information provided by the Division of Bond Finance. The Division of Bond Finance recommends a range for the long-term interest rate based on a benchmark rate of 2.80% plus a spread of 126 basis points for volatility for an interest rate of 4.06% on the low end and a benchmark rate of 2.80% plus a spread of 210 basis points for volatility for an interest rate of 4.90% on the high end. The 4.50% adopted rate has a spread of 170 basis points over the benchmark rate.

### Long-Term Interest Rate

Fiscal Year	2022-23	2023-24	2024-25	2025-26	2026-27
Interest Rate	4.50%	4.50%	4.50%	4.50%	4.50%

As recommended by the Division of Bond Finance in December 2019, the Conference discontinued 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 July 2021 National Economic Estimating Conference forecast for the yield on municipal bonds – the Bond Buyer 20-Bond Index. The July forecast for the Bond Buyer 20-Bond Index indicated a rise in interest rates, especially in the long term. The Conference raised the March rates in Fiscal Years 2022-23, 2025-26, and 2026-27 to maintain a spread of at least 50 basis points above the new Bond Buyer 20-Bond Index. This raised the rate by 25 basis points to 4.25% in the fifth year. Fiscal Years 2023-24 and 2024-25 remained unchanged.

### PECO Bonds Interest Rate

Fiscal Year	2022-23	2023-24	2024-25	2025-26	2026-27
Interest Rate - March 2021	3.25%	3.50%	3.75%	3.75%	4.00%
<b>Interest Rate - July 2021</b>	<b>3.50%</b>	<b>3.50%</b>	<b>3.75%</b>	<b>4.00%</b>	<b>4.25%</b>

**Division of Bond Finance  
Interest Rate Calculations**

July 20, 2021

Update of Analysis from March 10, 2021

# Division of Bond Finance

## Calculation of Long-Term Interest Rate

<b>Long-Term Interest Rate Information* [July 20, 2021]</b>		
Current Long-Term Interest Rate <sup>1</sup>	2.80%	2.80%
Plus: Volatility Spread <sup>2</sup>	1.26%	2.10%
<b>Long-Term Interest Rate Range</b>	<b>4.06%</b>	<b>4.90%</b>

<sup>1</sup> Interest rate estimate for a 30-year bond issue based on 5% coupons and estimated yields and credit spreads as of July 15, 2021. 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.

<sup>2</sup> Volatility spread from Division's analysis dated March 10, 2021.

**Long-Term Interest Rate:**

The long-term interest rate range of 4.06%-4.90% noted above is based on the Division of Bond Finance's (the "Division") analysis prepared for the March 2021 conference, with an update to the base rate to reflect changes in interest rates over the last three to four months. Since March, tax-exempt yields have declined and our base rate used in the analysis has decreased by approximately 0.25%, from 3.05% to 2.80%. The volatility spread analysis included in the March conference materials, which resulted in a range of historical volatility of 1.26% to 2.10%, has not been updated.

Tax-exempt interest rates continue to remain at very low levels due to favorable market fundamentals driven by an ongoing supply/demand imbalance with municipal fund flows continuing to outpace the supply of new issuance. However, further signs of high inflation and the potential tapering of federal monetary policies could put upward pressure on fixed-income yields during the time period that this estimate will be used.

**Short-Term Interest Rate:**

The State does not have any outstanding variable rate debt and there are no current plans for the issuance of new 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.

**Division of Bond Finance  
Interest Rate Calculations**

March 10, 2021

## Division of Bond Finance

### Calculation of Long-Term Interest Rate

<b>Long-Term Interest Rate Information* [March 10, 2021]</b>		
Current Long-Term Interest Rate <sup>1</sup>	3.05%	3.05%
Plus: Volatility Spread <sup>2</sup>	1.26%	2.10%
<b>Long-Term Interest Rate Range</b>	<b>4.31%</b>	<b>5.15%</b>

<sup>1</sup> Interest rate estimate for a 30-year bond issue based on 5% coupons and estimated yields and credit spreads as of March 5, 2021. 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.

<sup>2</sup> Used two measures to calculate interest rate volatility; (1) TM3 Municipal Market Data ("MMD") high-low range over the prior 12 months of 210 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 4.31% to 5.15% for the long-term interest rate.

Tax-exempt interest rates spiked in March 2020 as the onset of the COVID-19 pandemic prompted significant investor outflows from municipal bond funds. Following the enactment of a series of unprecedented monetary and fiscal relief measures by Congress and the Federal Reserve, investors slowly shifted back into the tax-exempt bond asset class, and by summer 2020 municipal interest rates had normalized near historical lows. Recently, the election results and likely passage of additional federal stimulus have propelled inflation expectations higher with US Treasury rates steadily increasing since November 2020. The municipal market had been relatively insulated from the rise in US Treasury rates, however, the second half of February 2021 saw the benchmark 30-year MMD AAA municipal bond rate increase by nearly 50 basis points, which may signal the potential for additional future volatility.

#### **Short-Term Interest Rate:**

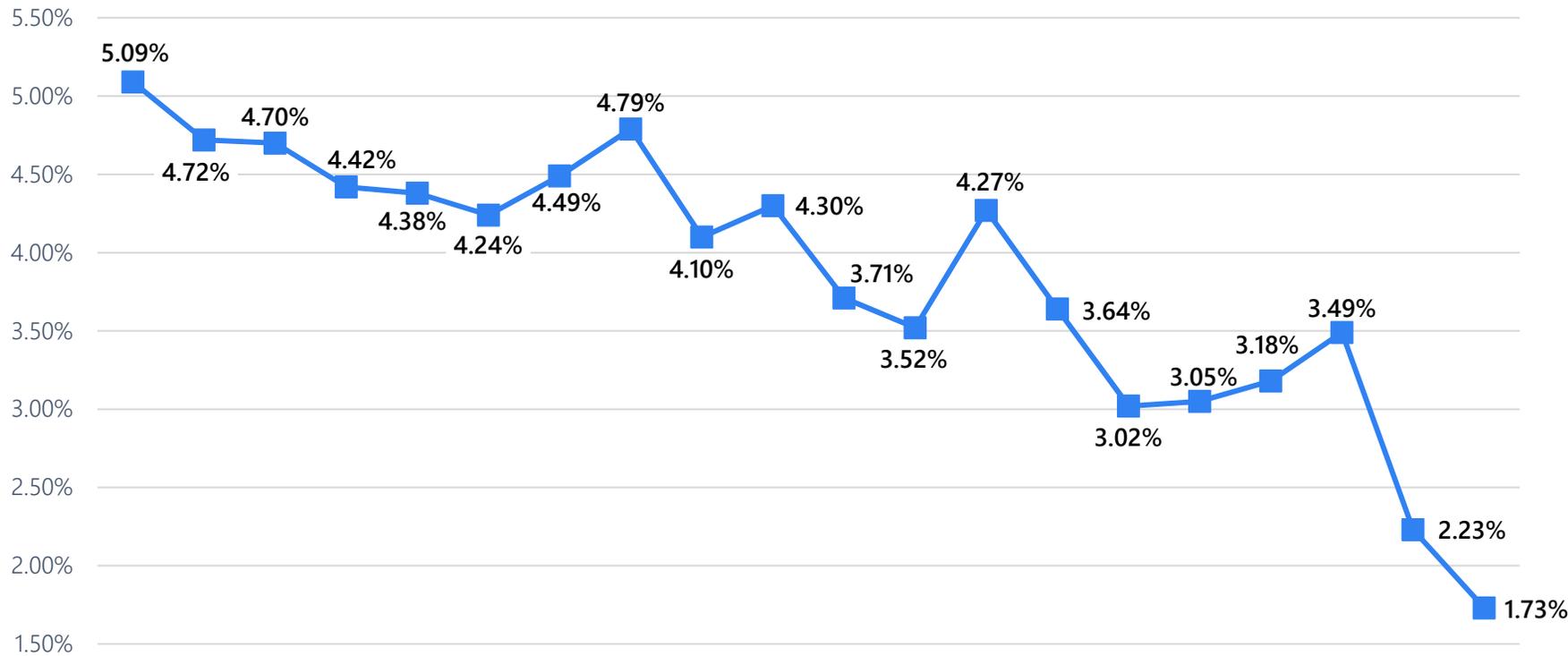
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## Long-Term Interest Rate Volatility

### 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	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021 YTD	Average
BB 11 GO Avg	5.09%	4.72%	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%	1.73%	4.05%
YOY Change	(0.21)%	(0.37)%	(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)%	(0.50)%	0.38% <sup>1</sup>

<sup>1</sup> Average calculated using absolute values of year-over-year changes.

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

The benchmark 30-year MMD AAA interest rate ranged from a low of 1.27% to a high of 3.37% over the last 12 months, a difference of 210 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.



**PECO BOND SALES AND INTEREST RATES**

(BOLD font indicates forecasted values)

	Bond Buyer 20-Bond Index		Series 2021 FY21-22	Series 2022 FY22-23	Series 2023 FY23-24	Series 2024 FY24-25	Series 2025 FY25-26	Series 2026 FY26-27
	Mar 2021	Jul 2021						
2019 Q3	3.41%	3.41%						
2019 Q4	3.16%	3.16%						
2020 Q1	3.45%	3.45%						
2020 Q2	2.79%	2.79%						
2020 Q3	2.15%	2.15%						
2020 Q4	2.22%	2.22%						
2021 Q1	2.24%	2.26%						
2021 Q2	2.37%	<b>2.21%</b>						
2021 Q3	2.42%	<b>2.33%</b>	<b>3.25% Jul 2021</b> 3.25% Mar 2021					
2021 Q4	2.45%	<b>2.50%</b>						
2022 Q1	2.48%	<b>2.64%</b>						
2022 Q2	2.53%	<b>2.73%</b>						
2022 Q3	2.59%	<b>2.78%</b>		<b>3.50% Jul 2021</b> 3.25% Mar 2021				
2022 Q4	2.66%	<b>2.82%</b>						
2023 Q1	2.74%	<b>2.87%</b>						
2023 Q2	2.78%	<b>2.92%</b>						
2023 Q3	2.83%	<b>2.96%</b>			<b>3.50% Jul 2021</b> 3.50% Mar 2021			
2023 Q4	2.87%	<b>2.99%</b>						
2024 Q1	2.91%	<b>3.04%</b>						
2024 Q2	2.97%	<b>3.10%</b>						
2024 Q3	3.02%	<b>3.15%</b>				<b>3.75% Jul 2021</b> 3.75% Mar 2021		
2024 Q4	3.06%	<b>3.23%</b>						
2025 Q1	3.11%	<b>3.28%</b>						
2025 Q2	3.16%	<b>3.32%</b>						
2025 Q3	3.21%	<b>3.39%</b>					<b>4.00% Jul 2021</b> 3.75% Mar 2021	
2025 Q4	3.26%	<b>3.43%</b>						
2026 Q1	3.32%	<b>3.47%</b>						
2026 Q2	3.36%	<b>3.49%</b>						
2026 Q3	3.41%	<b>3.53%</b>						<b>4.25% Jul 2021</b> 4.00% Mar 2021
2026 Q4	3.46%	<b>3.57%</b>						
2027 Q1	3.49%	<b>3.60%</b>						
2027 Q2	3.55%	<b>3.64%</b>						

<b>ADOPTED PECO BOND RATES, July 2021</b>	<b>3.25%</b>	<b>3.50%</b>	<b>3.50%</b>	<b>3.75%</b>	<b>4.00%</b>	<b>4.25%</b>
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