

**Division of Bond Finance  
Interest Rate Calculations**

**Revenue Estimating Conference**

Interest Rates Used for Appropriations,  
including PECO Bond Rates

July 17, 2019

## Division of Bond Finance

### Calculation of Long-Term Interest Rate

<i>Prior Conference Data [November 16, 2018]</i>		
<b>Long-Term Interest Rate Information</b>		
Current Long-Term Interest Rate <sup>1</sup>	4.09%	4.09%
Plus: Volatility Spread <sup>2</sup>	0.75%	1.00%
<b>Long-Term Interest Rate Range</b>	<b>4.84%</b>	<b>5.09%</b>
<b>Recommended Long-Term Interest Rate for FY 2019-20</b>	<b>5.00%</b>	

<sup>1</sup> Interest rate estimate for a 30-year bond issue based on estimated yields and credit spreads as of November 14, 2018.

<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 100 basis points and (2) Bond Buyer 11 GO Bond Index maximum annual change over the last 20 years of 75 basis points.

<i>Updated Data [July 17, 2019]</i>		
<b>Long-Term Interest Rate Information*</b>		
Current Long-Term Interest Rate <sup>1</sup>	3.37%	3.37%
Plus: Volatility Spread <sup>2</sup>	0.75%	1.16%
<b>Long-Term Interest Rate Range</b>	<b>4.12%</b>	<b>4.53%</b>
<b>Recommended Long-Term Interest Rate for FY 2020-21</b>	<b>5.00%</b>	

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

<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 116 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 4.12% to 4.53% 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 12-24 months from today).

Interest rates are currently benefitting from a significant supply/demand imbalance, with municipal bond funds reporting 27 consecutive weeks of positive fund flows (nearly \$50 billion of inflows in calendar year 2019). July is also traditionally the municipal bond market's biggest month for principal payments, and as a result investors who have had bonds in their portfolio mature have cash that they need to reinvest in the municipal market. From a supply perspective, the volume of municipal bonds issued nationally was down over 17% from FY 2017-18 to FY 2018-19. All of these factors have combined to create a very favorable market for municipal bonds from an interest rate perspective.

Given that the Division's methodology for the development of the long-term interest rate starts with an estimate of the interest rate on a 30-year bond using current estimates, the results are being directly influenced by the confluence of market factors that have resulted in the demand for municipal bonds exceeding the supply of bonds available for investors to purchase.

*\* 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.*

## Division of Bond Finance

### Calculation of Short-Term Interest Rate

<i>Prior Conference Data [November 16, 2018]</i>		
<b>Short-Term Interest Rate Information</b>		
Average Everglades 2007AB Rate in Past Twelve Months	1.37%	1.37%
Plus: Volatility Spread <sup>1</sup>	1.50%	2.00%
<b>Short-Term Interest Rate Range</b>	<b>2.87%</b>	<b>3.37%</b>
<b>Recommended Short-Term Interest Rate for FY 2019-20</b>	<b>3.25%</b>	

<sup>1</sup> Uses the volatility from the two largest year-over-year changes in SIFMA rates over the past 20 years of between 150 basis points and 200 basis points.

<i>Updated Data [July 17, 2019]</i>		
<b>Short-Term Interest Rate Information*</b>		
Average Everglades 2007AB Rate in Past Twelve Months	1.58%	1.58%
Plus: Volatility Spread <sup>1</sup>	1.50%	2.00%
<b>Short-Term Interest Rate Range</b>	<b>3.08%</b>	<b>3.58%</b>
<b>Recommended Short-Term Interest Rate for FY 2020-21</b>	<b>3.25%</b>	

<sup>1</sup> Uses the volatility from the two largest year-over-year changes in SIFMA rates over the past 20 years of between 150 basis points and 200 basis points.

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

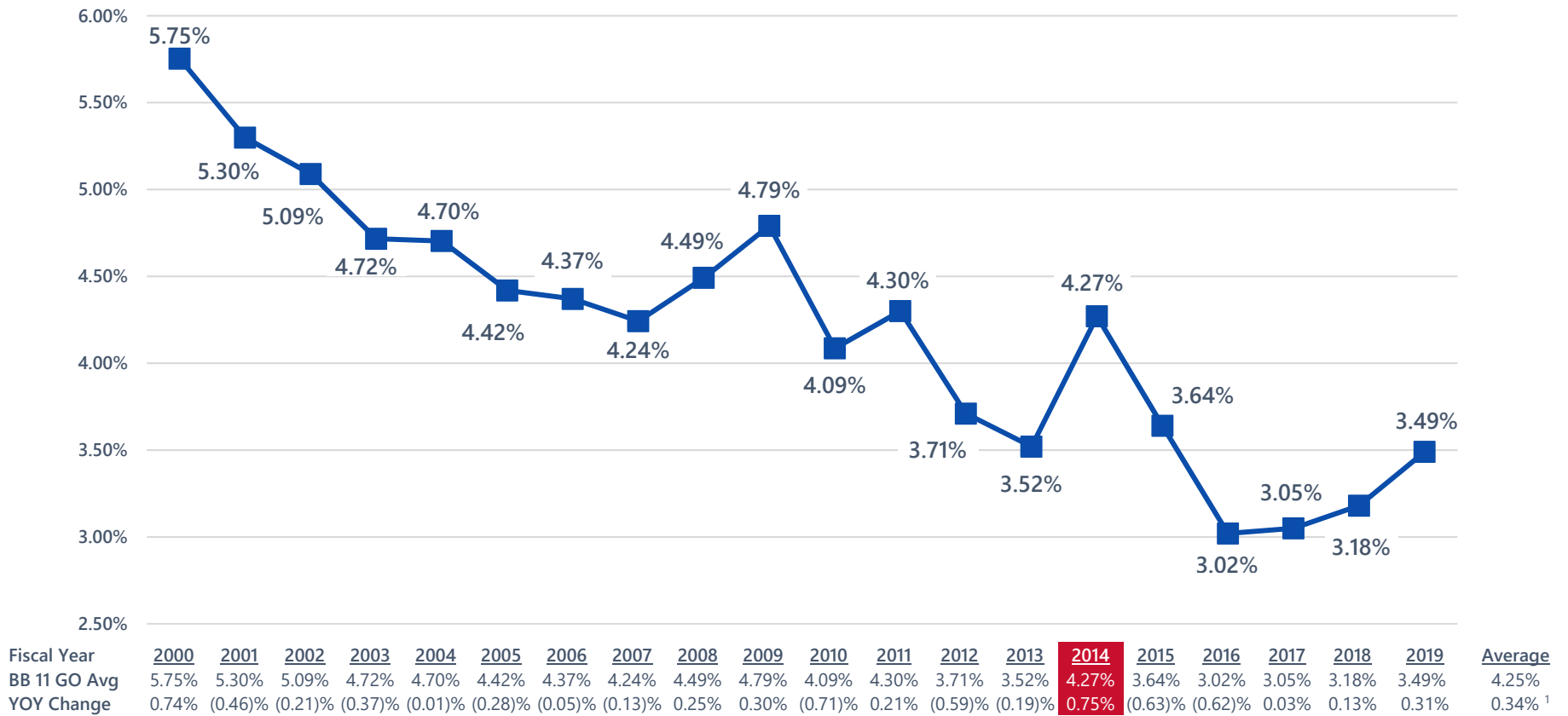
Using the interest rate range noted above, which is based on the Division of Bond Finance's historical methodology that analyzes short-term interest rate volatility over the past 20 years, the Division would recommend maintaining the short-term interest rate for appropriation purposes at 3.25%.

\* 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.

## 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.



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

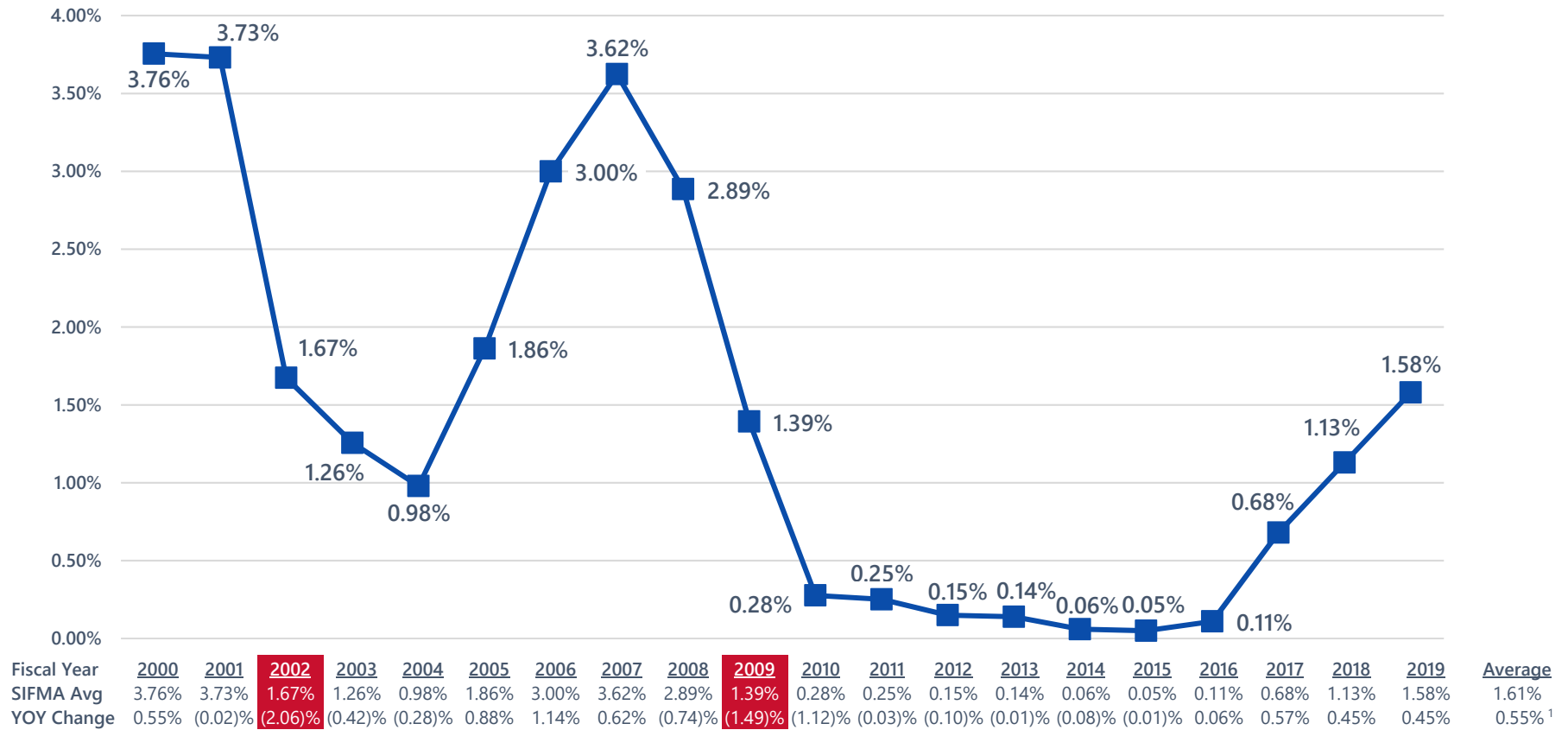
## Long-Term Interest Rate Volatility Change in 30-Year MMD AAA Rates Last 12 Months

The 30-year MMD AAA interest rate ranged from a low of 2.30% to a high of 3.46% over the last 12 months, a difference of 116 basis points.



## Short-Term Interest Rate Volatility Change in SIFMA Annual Average Interest Rates Last 20 Years

The maximum annual change in the SIFMA Index over the last 20 fiscal years is 206 basis points, with 149 basis points representing the next largest annual change.



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

## Short-Term Interest Rate History

### Average Everglades Bonds Variable Rate Resets

The average interest rate for the State's outstanding Everglades variable rate bonds was 1.15% during FY 2017-18 and 1.58% in FY 2018-19.

<u>Date</u>	<u>Interest Rate</u>	<u>Date</u>	<u>Interest Rate</u>
7/5/2017	0.88%	7/4/2018	1.22%
7/12/2017	0.87%	7/11/2018	1.14%
7/19/2017	0.84%	7/18/2018	1.04%
7/26/2017	0.87%	7/25/2018	0.95%
8/2/2017	0.81%	8/1/2018	1.35%
8/9/2017	0.79%	8/8/2018	1.48%
8/16/2017	0.78%	8/15/2018	1.57%
8/23/2017	0.79%	8/22/2018	1.60%
8/30/2017	0.80%	8/29/2018	1.58%
9/6/2017	0.79%	9/5/2018	1.51%
9/13/2017	0.85%	9/12/2018	1.50%
9/20/2017	0.90%	9/19/2018	1.49%
9/27/2017	0.96%	9/26/2018	1.59%
10/4/2017	0.93%	10/3/2018	1.58%
10/11/2017	0.93%	10/10/2018	1.57%
10/18/2017	0.92%	10/17/2018	1.61%
10/25/2017	0.93%	10/24/2018	1.61%
11/1/2017	0.94%	10/31/2018	1.61%
11/8/2017	0.94%	11/7/2018	1.64%
11/15/2017	0.96%	11/14/2018	1.68%
11/22/2017	0.97%	11/21/2018	1.70%
11/29/2017	0.99%	11/28/2018	1.71%
12/6/2017	1.03%	12/5/2018	1.66%
12/13/2017	1.12%	12/12/2018	1.64%
12/20/2017	1.45%	12/19/2018	1.71%
12/27/2017	1.76%	12/26/2018	1.73%
1/3/2018	1.47%	1/2/2019	1.62%
1/10/2018	1.35%	1/9/2019	1.37%
1/17/2018	1.24%	1/16/2019	1.32%
1/24/2018	1.19%	1/23/2019	1.31%
1/31/2018	1.09%	1/30/2019	1.44%
2/7/2018	1.00%	2/6/2019	1.52%
2/14/2018	1.01%	2/13/2019	1.76%
2/21/2018	1.10%	2/20/2019	1.77%
2/28/2018	1.14%	2/27/2019	1.76%
3/7/2018	1.16%	3/6/2019	1.68%
3/14/2018	1.26%	3/13/2019	1.62%
3/21/2018	1.41%	3/20/2019	1.53%
3/28/2018	1.57%	3/27/2019	1.51%
4/4/2018	1.65%	4/3/2019	1.49%
4/11/2018	1.76%	4/10/2019	1.55%
4/18/2018	1.81%	4/17/2019	2.07%
4/25/2018	1.78%	4/24/2019	2.43%
5/2/2018	1.63%	5/1/2019	2.13%
5/9/2018	1.53%	5/8/2019	1.61%
5/16/2018	1.39%	5/15/2019	1.36%
5/23/2018	1.21%	5/22/2019	1.32%
5/30/2018	1.04%	5/29/2019	1.40%
6/6/2018	1.04%	6/5/2019	1.47%
6/13/2018	1.38%	6/12/2019	1.77%
6/20/2018	1.52%	6/19/2019	1.90%
6/27/2018	1.51%	6/26/2019	1.87%
<b>FY 2018 Average</b>	<b>1.15%</b>	<b>FY 2019 Average</b>	<b>1.58%</b>



# Short-Term Interest Rate Everglades Series 2007A&B Variable Rate Bonds Interest Rates in FY 2017-18 & 2018-19

