Division of Bond Finance

Calculation of Long-Term Interest Rate

<table>
<thead>
<tr>
<th>Long-Term Interest Rate Information*</th>
<th>Low End</th>
<th>High End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Estimated Long-Term Interest Rate ¹</td>
<td>4.06%</td>
<td>4.06%</td>
</tr>
<tr>
<td>Plus: Volatility Spread ²</td>
<td>1.33%</td>
<td>1.40%</td>
</tr>
<tr>
<td>Long-Term Interest Rate Range</td>
<td>5.39%</td>
<td>5.46%</td>
</tr>
</tbody>
</table>

¹ Interest rate estimate for a 30-year bond issue based on 5% coupons and estimated yields and credit spreads as of July 19, 2023. 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”) 30-year AAA benchmark yield high-low range over the prior 12 months of 133 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 19, 2023, the Division’s methodology produces a range of 5.39% to 5.46% for the long-term interest rate.

The macro themes that drove the municipal market last year continue to persist in 2023. Muni bond funds reported outflows in 46 of 52 weeks in 2022, and this trend has continued in the current year with year-to-date outflows totaling $3.6 billion as of July 12, 2023. This has contributed to an ongoing negative supply/demand dynamic in the municipal market, though this has been partially offset by light new issuance, with volume down approximately 20% year-over-year through June. Much of the decrease in issuance is attributable to a decline in refunding transactions, as higher rates have made the economics of refinancings less attractive to issuers. The Federal Deposit Insurance Corporation’s liquidation of the portfolios of Signature Bank and Silicon Valley Bank, which included nearly $7 billion in municipal securities, added unexpected supply to the market but the effect was less impactful on rates than initially feared. Additionally, while CPI prints have improved in the first half of 2023, inflation remains well above the Fed’s target and the path to price stability remains unclear despite ten rate increases since March 2022 (the fastest pace of tightening since the early 1980’s).

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.

*Average calculated using absolute values of year-over-year changes.
The 30-year benchmark AAA MMD interest rate ranged from a low of 2.83% to a high of 4.16% over the last 12 months, a difference of 133 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.