



Leander Independent School District

November 16, 2017

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Agenda

1. Municipal Market Update
2. Debt Profile
3. Financing Product Solutions

Appendix A – Other Products

Appendix B – PFM's Municipal Monthly Market Review

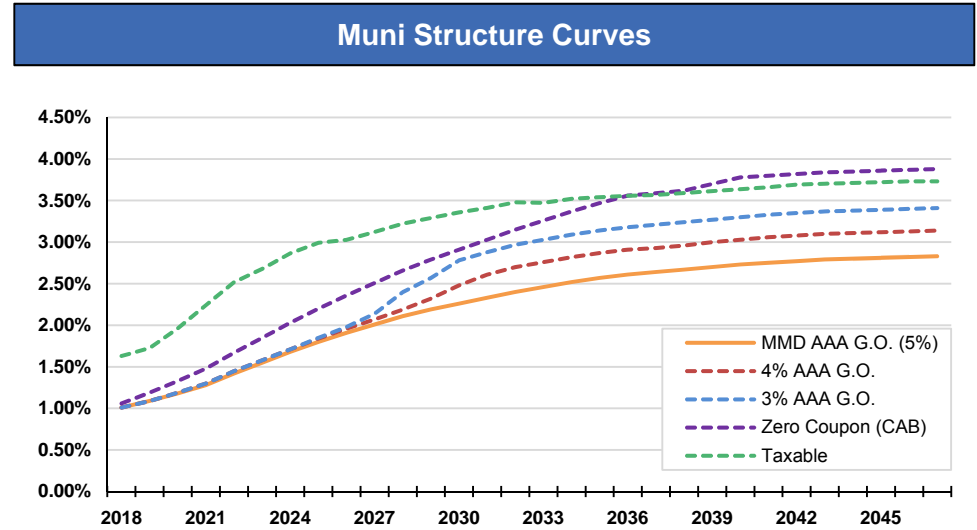


1. Municipal Market Update

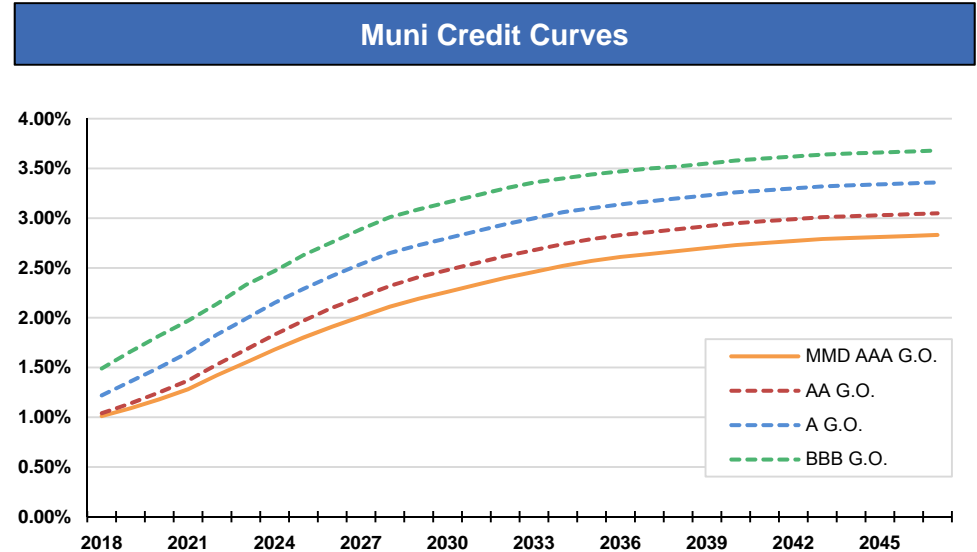


Municipal Interest Rates

Muni Structure Spreads*					
Maturity	MMD AAA G.O.	Spread to MMD (bps)			
		4.00%	3.00%	CAB	Taxable
1-yr	1.01%	---	---	+ 5	+ 62
2-yr	1.09%	---	---	+ 10	+ 64
3-yr	1.18%	+ 1	+ 1	+ 15	+ 78
5-yr	1.42%	+ 3	+ 3	+ 25	+ 110
7-yr	1.68%	+ 3	+ 3	+ 35	+ 119
10-yr	2.01%	+ 6	+ 13	+ 50	+ 111
15-yr	2.40%	+ 30	+ 57	+ 75	+ 108
20-yr	2.64%	+ 29	+ 57	+ 95	+ 93
30-yr	2.83%	+ 31	+ 58	+ 105	+ 90



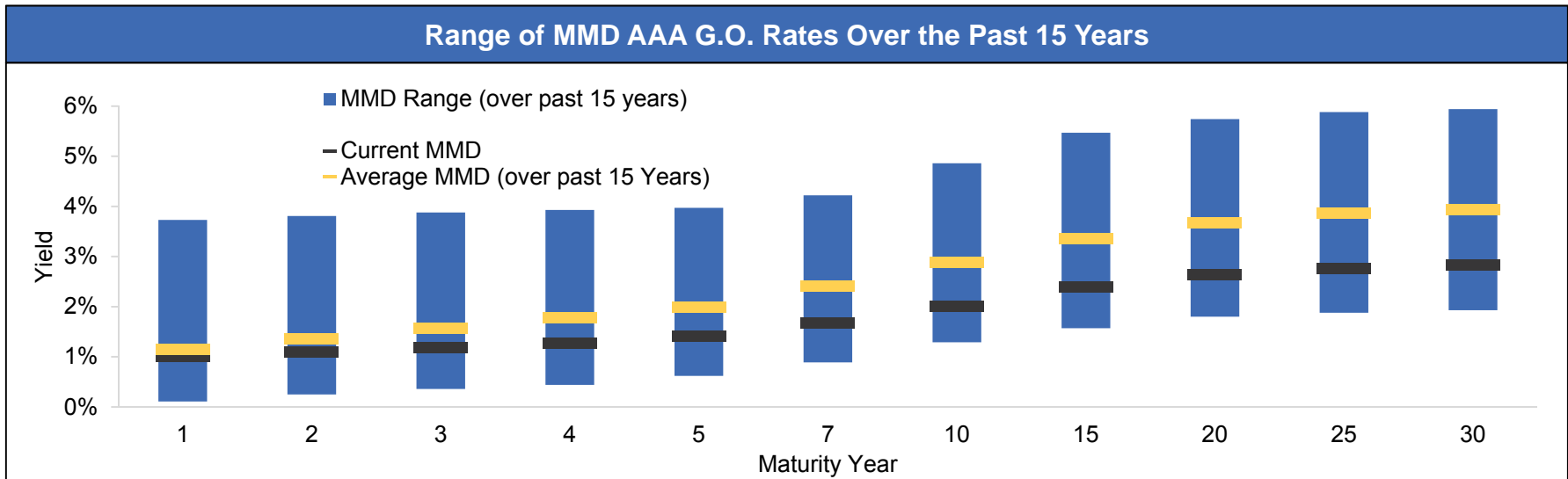
Muni Credit Spreads*				
Maturity	MMD AAA G.O.	Spread to MMD (bps)		
		AA G.O.	A G.O.	BBB G.O.
1-yr	1.01%	+ 3	+ 21	+ 48
2-yr	1.09%	+ 5	+ 27	+ 57
3-yr	1.18%	+ 7	+ 32	+ 64
5-yr	1.42%	+ 11	+ 41	+ 72
7-yr	1.68%	+ 15	+ 47	+ 79
10-yr	2.01%	+ 20	+ 53	+ 88
15-yr	2.40%	+ 22	+ 54	+ 90
20-yr	2.64%	+ 22	+ 53	+ 86
30-yr	2.83%	+ 22	+ 53	+ 85



* Scale Date as of 10/31/2017



Historical MMD



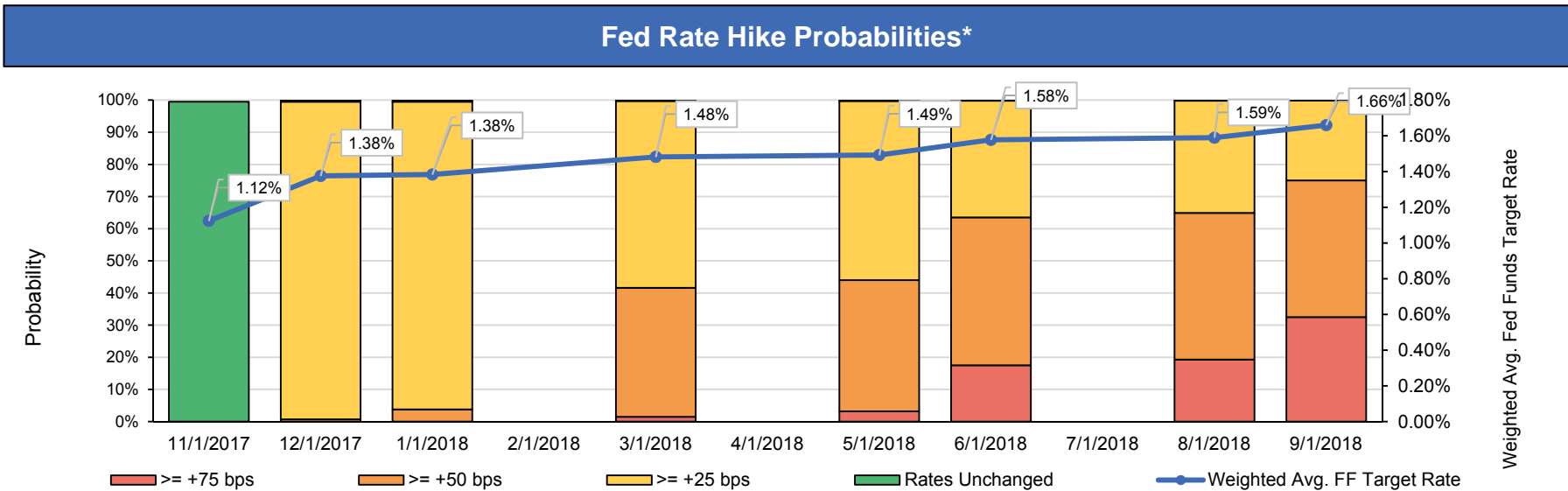
Spot Rates				
Year	Current 10/31/2017	1 Week Ago 10/24/2017	1 Month Ago 9/30/2017	1 Year Ago 10/31/2016
2	1.09	1.03	1.00	0.84
3	1.18	1.12	1.08	0.94
5	1.42	1.38	1.35	1.14
7	1.68	1.63	1.62	1.37
10	2.01	1.96	2.00	1.74
15	2.40	2.34	2.38	2.17
20	2.64	2.58	2.65	2.42
25	2.77	2.71	2.77	2.52
30	2.83	2.77	2.84	2.57
Range	1.74	1.74	1.84	1.73

Change in Spot Rate (basis points)			
Year	1 Week Ago 10/24/2017	1 Month Ago 9/30/2017	1 Year Ago 10/31/2016
2	6	9	25
3	6	10	24
5	4	7	28
7	5	6	31
10	5	1	27
15	6	2	23
20	6	-1	22
25	6	0	25
30	6	-1	26

* Scale Date as of 10/31/2017



Long-term rates remain low; the Fed may raise rates further in 2017 and 2018

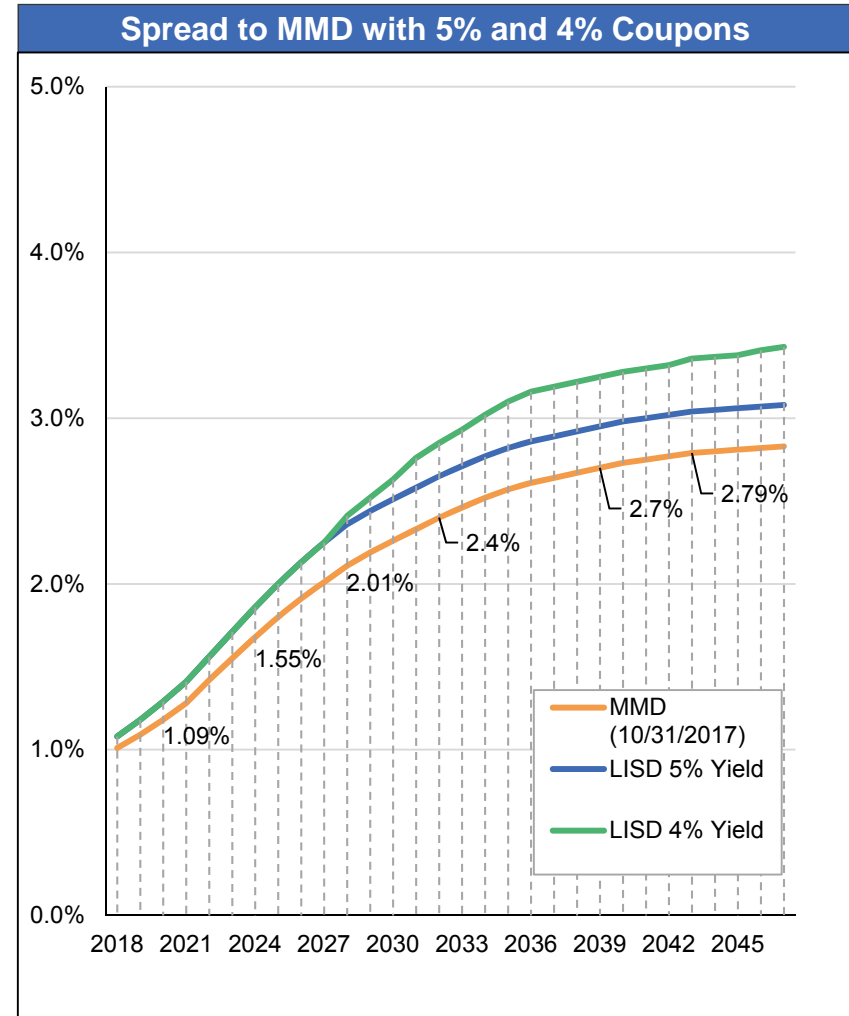


* Probabilities of Fed rate hikes are based upon current Fed Fund Futures trading. Scale date as of 10/31/2017



Indicative Pricing | Unlimited Tax Debt

Leander ISD (AA) / (AAA with PSF)					
Year	MMD 10/31/2017	Tax-Exempt Spread (5% Coupon)	LISD Yields (5% Coupon)	Tax-Exempt Spread (4% Coupon)	LISD Yields (4% Coupon)
2018	1.01	+7 bps	1.08	+7 bps	1.08
2019	1.09	+9 bps	1.18	+9 bps	1.18
2020	1.18	+11 bps	1.29	+11 bps	1.29
2021	1.28	+13 bps	1.41	+13 bps	1.41
2022	1.42	+14 bps	1.56	+14 bps	1.56
2023	1.55	+16 bps	1.71	+16 bps	1.71
2024	1.68	+18 bps	1.86	+18 bps	1.86
2025	1.80	+20 bps	2.00	+20 bps	2.00
2026	1.91	+22 bps	2.13	+22 bps	2.13
2027	2.01	+24 bps	2.25	+24 bps	2.25
2028	2.11	+25 bps	2.36	+30 bps	2.41
2029	2.19	+25 bps	2.44	+33 bps	2.52
2030	2.26	+25 bps	2.51	+37 bps	2.63
2031	2.33	+25 bps	2.58	+43 bps	2.76
2032	2.40	+25 bps	2.65	+45 bps	2.85
2033	2.46	+25 bps	2.71	+47 bps	2.93
2034	2.52	+25 bps	2.77	+50 bps	3.02
2035	2.57	+25 bps	2.82	+53 bps	3.10
2036	2.61	+25 bps	2.86	+55 bps	3.16
2037	2.64	+25 bps	2.89	+55 bps	3.19
2038	2.67	+25 bps	2.92	+55 bps	3.22
2039	2.70	+25 bps	2.95	+55 bps	3.25
2040	2.73	+25 bps	2.98	+55 bps	3.28
2041	2.75	+25 bps	3.00	+55 bps	3.30
2042	2.77	+25 bps	3.02	+55 bps	3.32
2043	2.79	+25 bps	3.04	+57 bps	3.36
2044	2.80	+25 bps	3.05	+57 bps	3.37
2045	2.81	+25 bps	3.06	+57 bps	3.38
2046	2.82	+25 bps	3.07	+59 bps	3.41
2047	2.83	+25 bps	3.08	+60 bps	3.43



1. Scale Date as of 10/31/2017
2. Scale Pricing assumes a 10-year call option



2. Debt Profile



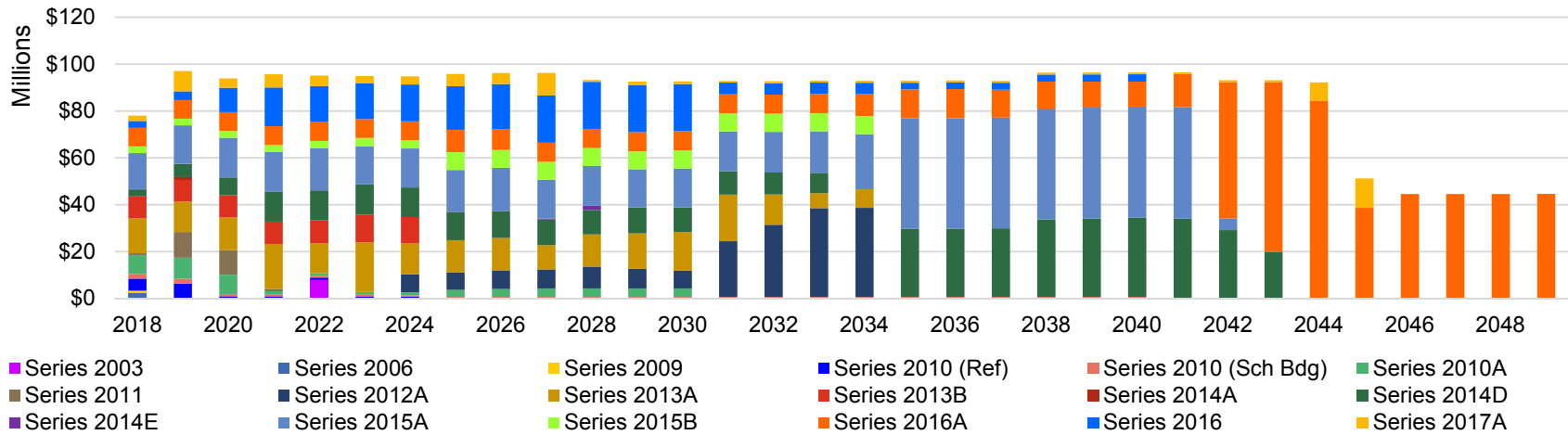
Tax-Backed Debt Profile | Unlimited Tax Debt

Outstanding Unlimited Tax Debt by Series					
Transaction	Par Outstanding	Maximum Yield	Final Maturity	Coupon	Use of Proceeds
Series 2003	\$ 2,989,388	5.17%	8/15/2022	Fixed	Ref/NM
Series 2006	2,185,000	4.39%	8/15/2018	Fixed	Ref/NM
Series 2009	590,000	4.40%	8/15/2018	Fixed	NM
Series 2010	2,068,184	4.61%	8/15/2024	Fixed	Ref
Series 2010	11,105,000	4.32%	8/15/2040	Fixed	NM
Series 2010A	14,305,682	5.53%	8/15/2030	Fixed	Ref
Series 2011	21,175,000	3.09%	8/15/2021	Fixed	Ref
Series 2012A	25,881,718	4.34%	8/15/2034	Fixed	Ref
Series 2013A	134,804,084	4.46%	8/15/2034	Fixed	Ref
Series 2013B	37,870,770	3.59%	8/15/2024	Fixed	Ref
Series 2014A	1,140,000	1.36%	8/15/2019	Fixed	NM
Series 2014D	114,996,322	4.89%	8/15/2043	Fixed	Ref
Series 2014E	2,140,000	2.65%	8/15/2028	Fixed	NM
Series 2015A	250,352,357	4.45%	8/15/2042	Fixed	Ref
Series 2015B	39,799,201	3.83%	8/15/2034	Fixed	Ref
Series 2016	87,089,239	3.09%	8/15/2040	Fixed	Ref
Series 2016A	190,481,088	4.06%	8/15/2049	Fixed-Step	Ref
Series 2017A	<u>53,725,000</u>	3.58%	8/15/2045	Fixed-Step	Ref
TOTAL	\$ 992,698,034				

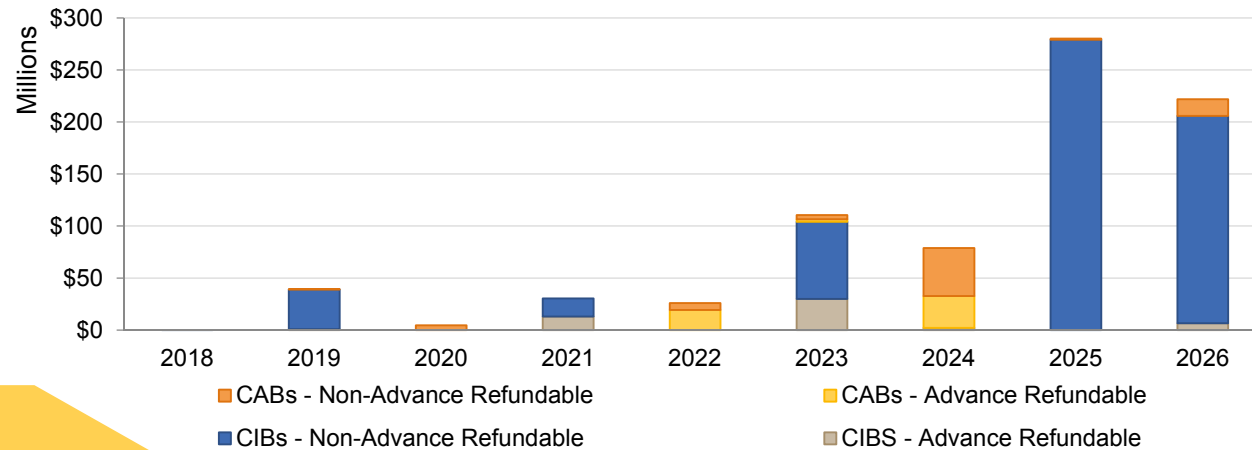


Debt Profile Information

Debt Service Requirement by Series

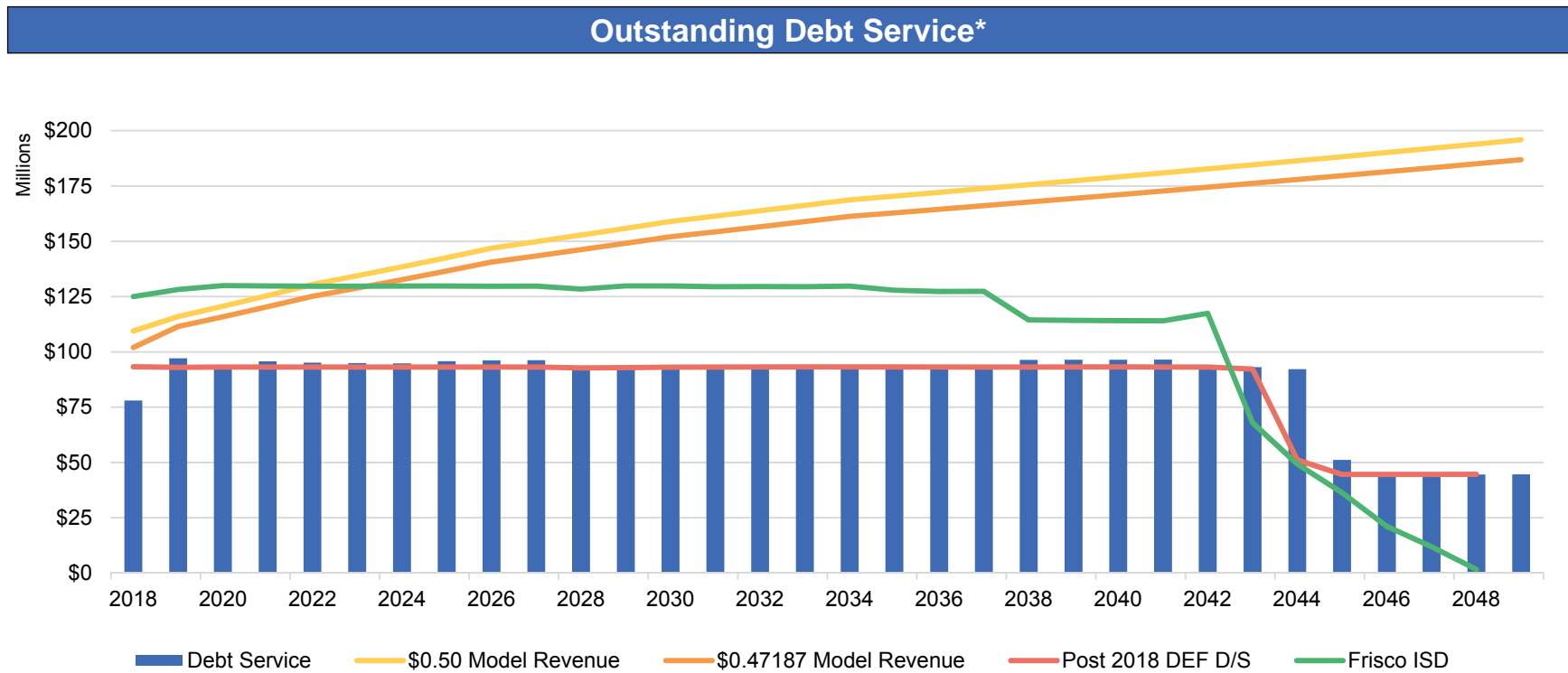


Callable Bonds





Debt Profile and Overlay



***Assumptions:**

- 1) Assumes model collection rate.
- 2) Based on information obtained from the Municipal Advisory Counsel of Texas Website.
- 3) All analysis is preliminary and subject to change.



3. Financing Product Solutions



General Objectives and Considerations

PFM understands that the District may be interested in pursuing financing solutions which:

- Fund projects according to strategic plan / as needed
- Fund projects in advance of long-term debt issuance
- Minimize interest expense by borrowing on the short end of the yield curve
- Structure around capacity and revenue “pinch” points
- Eliminate negative carry associated with issuing long term fixed-rate bonds for construction projects by borrowing on funds as needed
- Meet amortization targets

Forward Considerations:

- Attorney General (AG) and Texas Education Agency (TEA) considerations
 - Treatment of debt instruments from \$0.50 debt capacity standpoint
 - PSF eligibility
 - Cost minimization
 - Risks
 - Maintenance of flexibility



Existing Debt Portfolio

The District's outstanding debt profile utilizes the following types of instruments:

- Fixed Rate Bonds – An interest rate on a security that does not change for the remaining life of the security
 - Current Interest Bond (CIB)* – A bond on which interest payments are made to the bondholders on a periodic basis
 - Capital Appreciation Bond (CAB)* – A municipal security on which the investment return on an initial principal amount is reinvested at a stated compounded rate until maturity. At maturity, the investor receives a single payment (the “maturity value”) representing both the initial principal amount and the total investment return
- Adjustable/Variable Interest Rate* – An interest rate, sometimes referred to as a “floating rate,” on a security that is reset at specified intervals according to market conditions or a predetermined index or formula
 - Stepped Coupon Bonds* – Bonds on which the fixed interest rate periodically changes (generally increasing) over their life on specified dates and at specified interest rates
 - Note: ALL District Stepped-Coupon Bonds have a defined coupon structure
 - While the coupon does “change”, the changes (coupon and date) are fixed
 - If never refinanced, LISD knows the maximum debt service to maturity

*Definition Source: Full version of definitions are found in the Municipal Securities Rulemaking Board (or “MSRB”), Glossary of Municipal Securities Terms. Please go to <http://www.msrb.org/glossary.aspx> for more information. The abridged terms are provided here for informational/educational purposes only.



Potential Products of Interest

Products for Consideration by District:

- Commercial Paper (CP)* - Short-term obligations issued by municipal entities usually backed by a line of credit with a bank that mature within 270 days
 - The issuer typically pays maturing principal of outstanding commercial paper with newly issued commercial paper, referred to as a “roll over,” thereby borrowing funds on a short-term basis for an extended period of time
 - Rate reset periods may vary from one to 270 days and different portions of a single issue of commercial paper may simultaneously have different reset periods
- Put/Tender Option Bond (Put)* - Obligations that grant the bondholder the right to require the issuer or a specified third party acting as agent for the issuer to purchase the bonds, usually at par, at a certain time or times prior to maturity or upon the occurrence of specified events or conditions
 - The put option or tender option right is typically available to the investor on a periodic basis
 - Typically, these securities are floating or variable rate securities, with the put option exercisable on dates on which the floating rate changes

*Definition Source: Full version of definitions are found in the Municipal Securities Rulemaking Board (or “MSRB”), Glossary of Municipal Securities Terms. Please go to <http://www.msrb.org/glossary.aspx> for more information. The abridged terms are provided here for informational/educational purposes only.



Commercial Paper (also referred to as “CP”)

Overview

- Commercial paper is a short-term product which matures anywhere from 1 to 270 days
- CP is supported by credit and liquidity facilities provided by banks or through self-liquidity of the issuer
- CP does not contain an investor put option, but rather has a stated maturity date
- A related credit or liquidity facility may be drawn in the event the CP cannot be rolled on any given stated maturity date

Considerations

- Interest rate risk
- Liquidity risk
- Credit / liquidity renewal risk
- Liquidity provider default risk
- Additional risks including reinvestment risk and tax compliance risk
- AG/TEA considerations
- Need for credit/liquidity facility
 - Associated costs
 - Facility
 - Remarketing
 - Issue/Roll
 - Administrative burden

Largest Tax-Exempt Money Market Funds by AUM

Rank	Fund Family	Assets (\$mm)	Market Share (%)
1	Fidelity	37,285	30.1%
2	Vanguard	26,099	21.1%
3	Schwab	23,899	19.3%
4	JPMorgan	17,012	13.7%
5	Federated	5,951	4.8%
6	Blackrock	3,265	2.6%
7	UBS	2,315	1.9%
8	Dreyfus	1,957	1.6%
9	USAA	1,954	1.6%
10	Goldman	893	0.7%
Top 10 Total		120,634	97.4%

Source: Crane T-E MMF; as of April 30, 2017

Examples





Soft Put Bonds

Overview

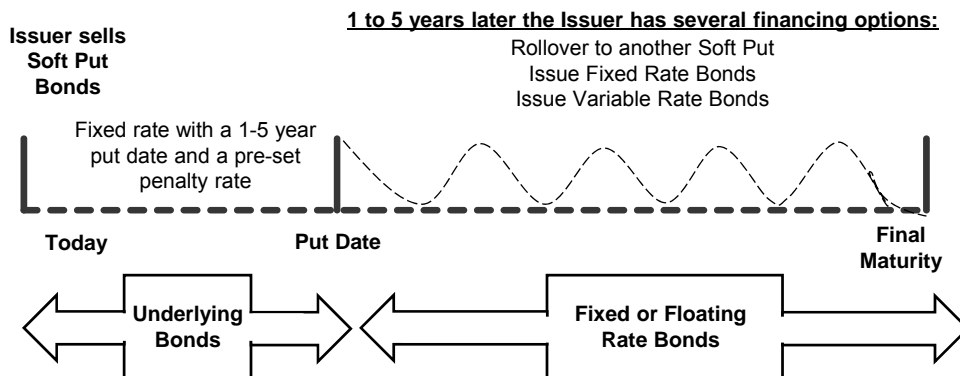
Put bonds are fixed rate bonds that have a long-term (e.g.30-year) nominal maturity with a mandatory investor put prior to maturity (e.g. 1, 5, 7 or 10-year mandatory put date)

- Put bonds are priced to the mandatory tender or “put” date, allowing issuers to take lock in rates at the shorter end of the yield curve; issuers may take advantage of lower short term rates in steep yield curve environments
- At the put date, the bonds must be remarketed or refinanced which is typically done by rolling the puts to another put date in the future or converting to long-term fixed rate bonds
- For a **soft put**, the issuer pays a punitive interest rate on the bonds in the event they are not refinanced at the mandatory tender date

Considerations

- Interest rate and refinancing risk – at maturity or put date, if roll into new bonds, exposure to changes in interest rates due to general interest rate increases, fall in ratings, etc.
- Remarketing risk – Under a soft put structure, if unable to pay debt or refinance on put date, interest rate may increase to the maximum rate but no event of default occurs
- Considerations of AG/TEA
 - Capacity
 - PSF eligibility
- Limited investor demand

Examples

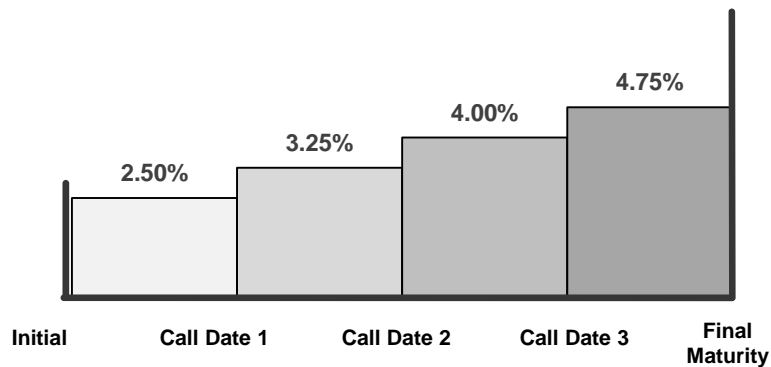




Stepped Coupon Bonds

Overview





- A stepped-coupon bond pays an initial coupon rate for the first period, then a higher rate for the following periods.
 - One-step bond – the coupon will reset once during the life of the bond
 - Multi-step bond- the coupon will reset multiple during the life of the bond
- Coupons on stepped coupon bonds change to predetermined levels on specific dates.
- At the call date, issuers may engineer the option to call the bond on the date the interest is scheduled to change.



Considerations

- Cash-flow enhancement
- Though fixed, change in debt service over time
- Limited investor demand
- Absolute cost

Examples

Leander ISD 	New York University 	Pennsylvania Turnpike 	UT System 
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Coupons/Product Impact Discussion

Potential Impact of Couponing/Product ⁽¹⁾				
Assumptions	4% CIB	5% CIB	Step Coupon CIB	Soft Put ⁽²⁾
Initial Borrowing Date	8/15/2018	8/15/2018	8/15/2018	8/15/2018
Initial Project Fund	\$ 35,000,000	\$ 35,000,000	\$ 35,000,000	\$ 35,000,000
Par Call Refunding/Remarket Date	8/15/2028	8/15/2028	8/15/2023	8/15/2023
Maturity Date	8/15/2048	8/15/2048	8/15/2048	8/15/2048
Initial Coupon	4.000%	5.000%	2.500%	4.000%
Max Coupon	4.000%	5.000%	5.500%	4.000%
Total Debt Service - Initial Transaction	\$ 74,162,000	\$ 75,787,500	\$ 82,348,125	\$ 99,845,250
Total Debt Service - After Refinancings/Remarketings	\$ 63,579,000	\$ 60,771,000	\$ 69,506,563	\$ 54,831,000

⁽¹⁾ For illustrative purposes.

⁽²⁾ Initial Debt Service contemplates debt service after initial remarking date of 7.50%.



Product Impact Discussion

Potential Impact of Product ⁽¹⁾		
Assumptions	5% CIB	CP & 5% CIB
CP Start Date	N/A	8/15/2018
CP End Date	N/A	8/15/2020
Bond Issuance Date	8/15/2018	8/15/2020
Initial Project Fund	\$ 61,900,000	\$ 61,900,000
Par Call Date	8/15/2028	8/15/2030
Maturity Date	8/15/2043	8/15/2043
Coupon	5.000%	5.000%
Total Debt Service - Initial	\$ 120,172,500	\$ 117,839,000

⁽¹⁾ For illustrative purposes.